

**U. S. ARMY CORPS OF ENGINEERS
Water Quality Certification // Natural Resources Protection Act
Kennebec River Dredge – Bath and Phippsburg**

EXCERPTS FROM THE DEPARTMENT'S RECORD

- Correspondence from licensee and appellants received during Department review.

Green, Robert

From: Kavanaugh, William M NAE [William.M.Kavanaugh@usace.army.mil]
Sent: Thursday, February 03, 2011 2:45 PM
To: Green, Robert
Cc: Clement, Jay L NAE
Subject: FW: (UNCLASSIFIED)

Attachments: Kennebec_River_GS_Results 010411.PDF; PophamBeach_Disposal2010FieldSamples.pdf; DoublingPoint_Disposal2010FieldSamples.pdf



Kennebec_River_G PophamBeach_Disposal2010FieldSamples.pdf; DoublingPoint_Disposal2010FieldSamples.pdf

Classification: UNCLASSIFIED

Caveats: NONE

Hi Bob,

In anticipation of meeting with you next week to discuss dredging in the Kennebec, I'm sending you the attached files which are the grain size curves from the recent sampling and testing we did in the river at Doubling Point and at Popham Beach and from the Jackknife Ledge Disposal Area. We also attempted to get a sample at the in-river disposal site, however, our grab sampler got lodged on the rocky bottom (in about 95' of water) at the disposal site and was lost to the cause, so no sample was taken there.

As part of our hydrographic surveying effort we did get a survey of the in-river disposal site; the results of which I think may go far in future discussions with Dot Kelly. At least now we have a baseline of depths. I'll bring a copy of that survey with me to the meeting.

I look forward to meeting with you next week.

Regards

Bill

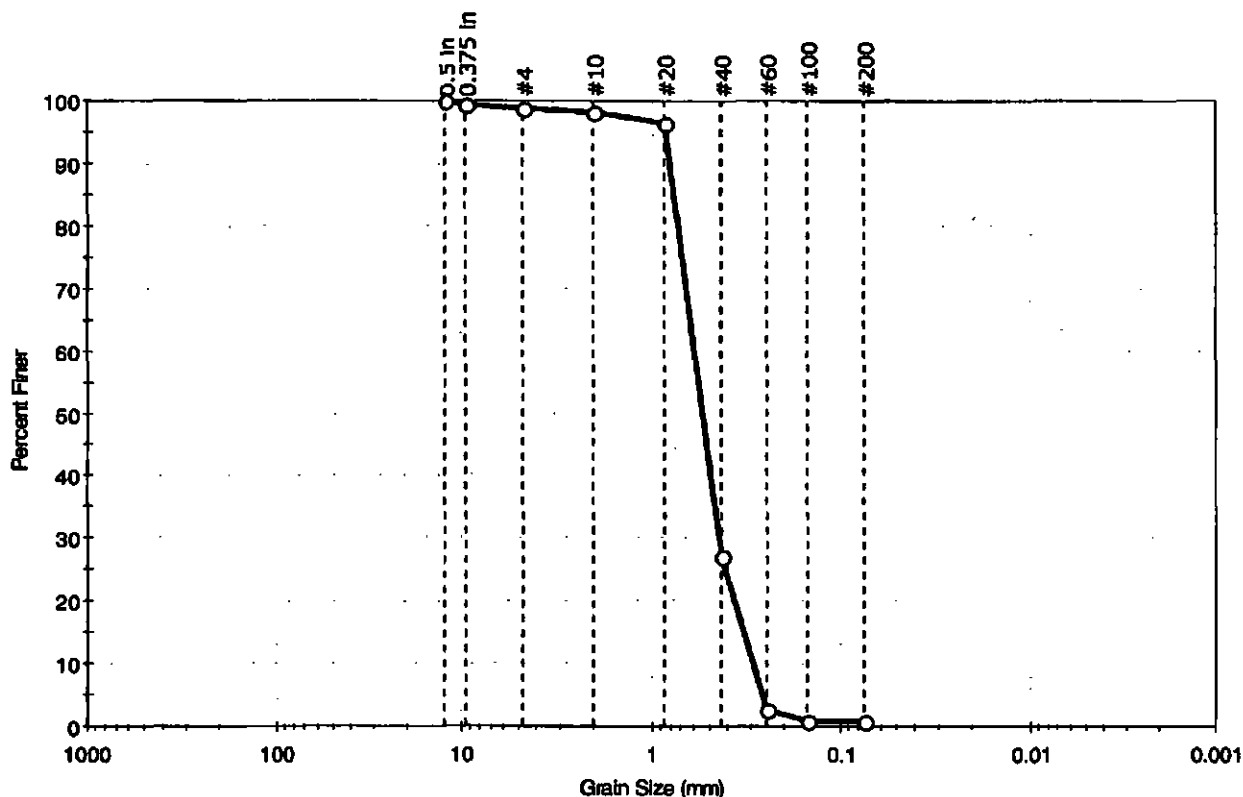
Classification: UNCLASSIFIED

Caveats: NONE



| | | |
|---------------------------------------|-----------------------|-----------------|
| Client: U.S. Army Corps of Engineers | Project No: GTX-10487 | |
| Project: Kennebec River | | |
| Location: --- | Sample Type: bag | Tested By: jbr |
| Boring ID: --- | Test Date: 01/04/11 | Checked By: jdt |
| Sample ID: Kennebec A | Test Id: 202154 | |
| Depth: --- | | |
| Test Comment: --- | | |
| Sample Description: Moist, brown sand | | |
| Sample Comment: --- | | |

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



| % Cobble | % Gravel | % Sand | % Silt & Clay Size |
|----------|----------|--------|--------------------|
| — | 1.1 | 98.1 | 0.8 |

| Sieve Name | Sieve Size, mm | Percent Finer | Spec. Percent | Complies |
|------------|----------------|---------------|---------------|----------|
| 0.5 in | 12.50 | 100 | | |
| 0.375 in | 9.50 | 99 | | |
| #4 | 4.75 | 99 | | |
| #10 | 2.00 | 98 | | |
| #20 | 0.85 | 96 | | |
| #40 | 0.42 | 27 | | |
| #60 | 0.25 | 3 | | |
| #100 | 0.15 | 1 | | |
| #200 | 0.075 | 1 | | |

Coefficients

| | |
|-----------------------------|-----------------------------|
| D ₈₅ = 0.7579 mm | D ₃₀ = 0.4371 mm |
| D ₆₀ = 0.5902 mm | D ₁₅ = 0.3261 mm |
| D ₅₀ = 0.5340 mm | D ₁₀ = 0.2925 mm |
| C _u = 2.018 | C _c = 1.107 |

Classification

ASTM Poorly graded sand (SP)

AASHTO Stone Fragments, Gravel and Sand (A-1-b (0))

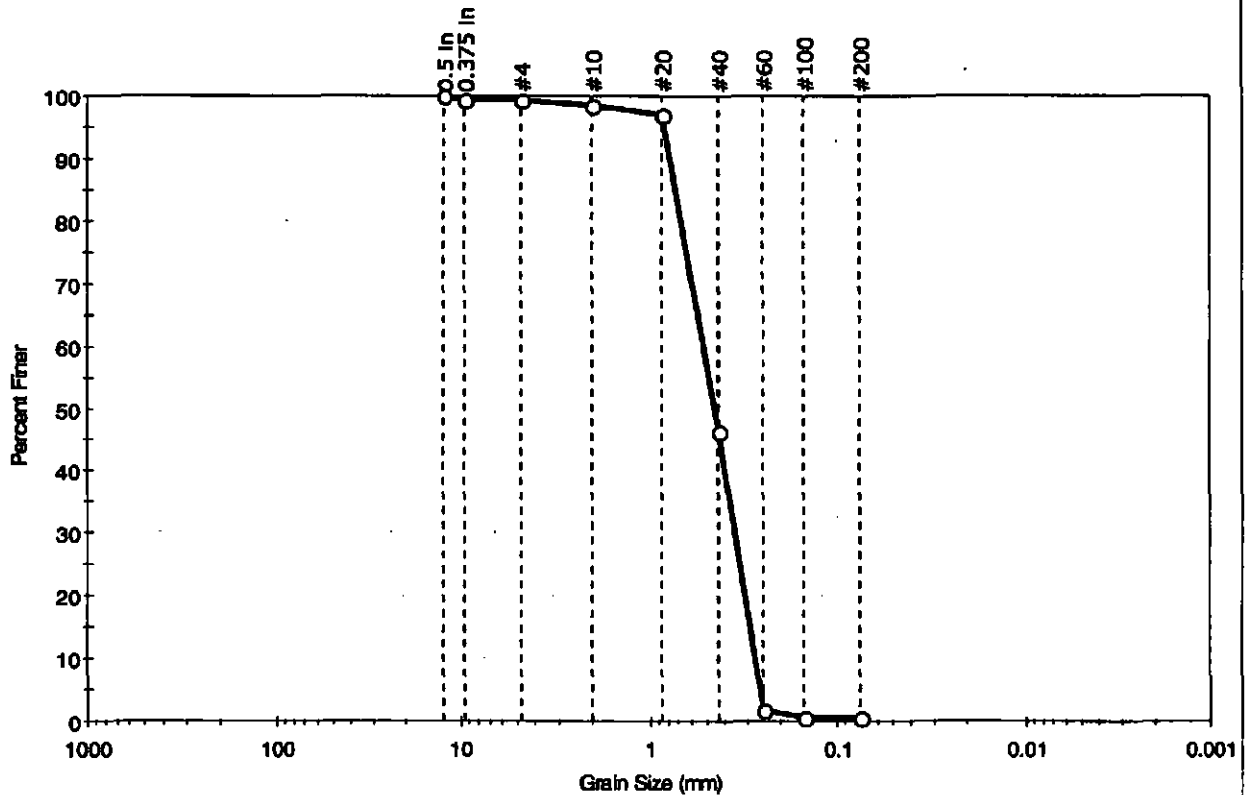
Sample/Test Description

Sand/Gravel Particle Shape : ---
Sand/Gravel Hardness : ---



| | | |
|---------------------------------------|-----------------------|-----------------|
| Client: U.S. Army Corps of Engineers | Project No: GTX-10487 | |
| Project: Kennebec River | | |
| Location: --- | | |
| Boring ID: --- | Sample Type: bag | Tested By: jbr |
| Sample ID: Kennebec C | Test Date: 01/04/11 | Checked By: jdt |
| Depth: --- | Test Id: 202155 | |
| Test Comment: --- | | |
| Sample Description: Moist, brown sand | | |
| Sample Comment: --- | | |

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



| % Cobble | % Gravel | % Sand | % Silt & Clay Size |
|----------|----------|--------|--------------------|
| — | 0.6 | 98.7 | 0.7 |

| Sieve Name | Sieve Size, mm | Percent Finer | Spec. Percent | Complies |
|------------|----------------|---------------|---------------|----------|
| 0.5 in | 12.50 | 100 | | |
| 0.375 in | 9.50 | 100 | | |
| #4 | 4.75 | 99 | | |
| #10 | 2.00 | 98.7 | | |
| #20 | 0.85 | 46 | | |
| #40 | 0.42 | 2 | | |
| #60 | 0.25 | 1 | | |
| #100 | 0.15 | 1 | | |
| #200 | 0.075 | 1 | | |

Coefficients

| | |
|----------------------|----------------------|
| $D_{85} = 0.7202$ mm | $D_{30} = 0.3498$ mm |
| $D_{60} = 0.5118$ mm | $D_{15} = 0.2928$ mm |
| $D_{50} = 0.4464$ mm | $D_{10} = 0.2759$ mm |
| $C_u = 1.855$ | $C_c = 0.867$ |

Classification

ASTM Poorly graded sand (SP)

AASHTO Stone Fragments, Gravel and Sand (A-1-b (0))

Sample/Test Description

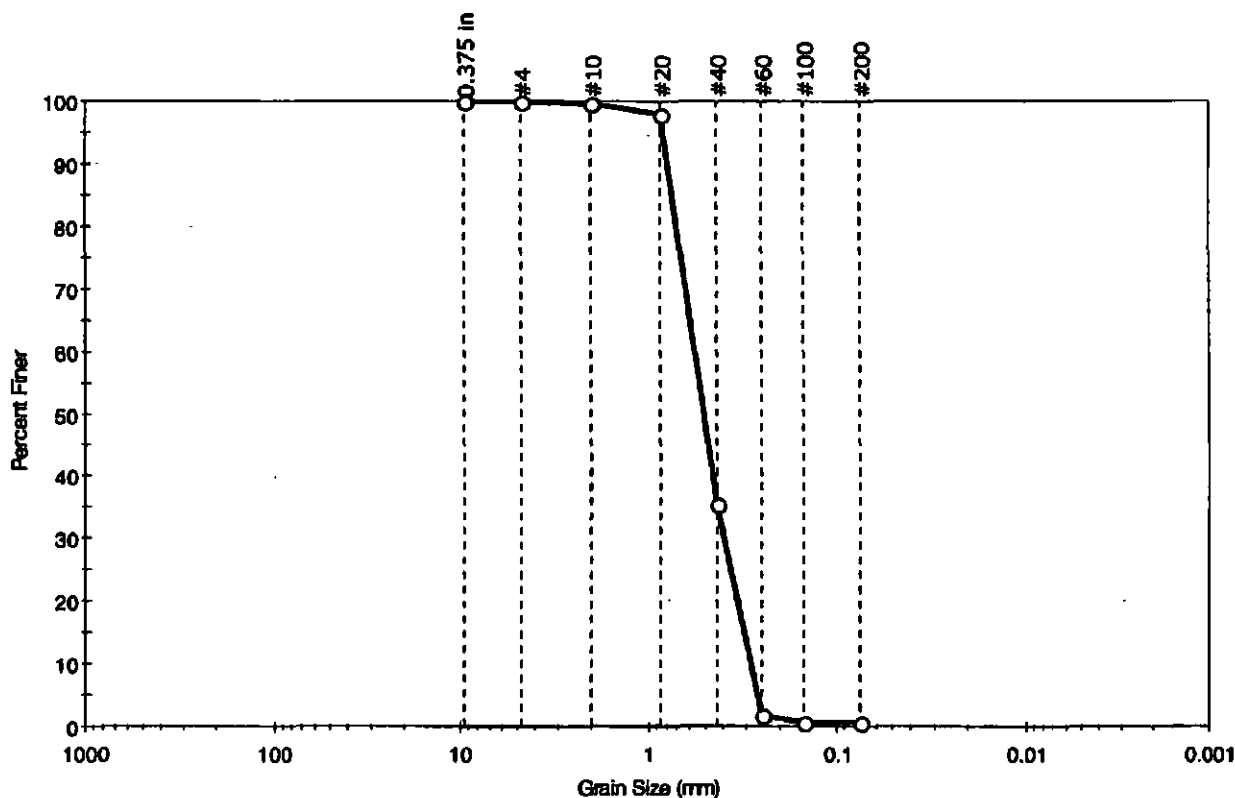
Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---



| | | |
|--|-----------------------|-----------------|
| Client: U.S. Army Corps of Engineers | Project No: GTX-10487 | |
| Project: Kennebec River | | |
| Location: --- | Sample Type: bag | Tested By: jbr |
| Boring ID: --- | Test Date: 01/04/11 | Checked By: jdt |
| Sample ID: Kennebec D | Test Id: 202156 | |
| Depth: --- | | |
| Test Comment: --- | | |
| Sample Description: Moist, dark brown sand | | |
| Sample Comment: --- | | |

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



| %Cobble | %Gravel | %Sand | %Silt & Clay Size |
|---------|---------|-------|-------------------|
| — | 0.1 | 99.4 | 0.5 |

| Sieve Name | Sieve Size, mm | Percent Finer | Spec. Percent | Complies |
|------------|----------------|---------------|---------------|----------|
| 0.375 in | 9.50 | 100 | | |
| #4 | 4.75 | 100 | | |
| #10 | 2.00 | 100 | | |
| #20 | 0.85 | 98 | | |
| #40 | 0.42 | 35 | | |
| #60 | 0.25 | 2 | | |
| #100 | 0.15 | 1 | | |
| #200 | 0.075 | 0 | | |

Coefficients

| | |
|-----------------------------|-----------------------------|
| D ₈₅ = 0.7359 mm | D ₃₀ = 0.3907 mm |
| D ₆₀ = 0.5582 mm | D ₁₅ = 0.3085 mm |
| D ₅₀ = 0.4998 mm | D ₁₀ = 0.2852 mm |
| C _u = 1.957 | C _c = 0.959 |

Classification

ASTM Poorly graded sand (SP)

AASHTO Stone Fragments, Gravel and Sand (A-1-b (0))

Sample/Test Description

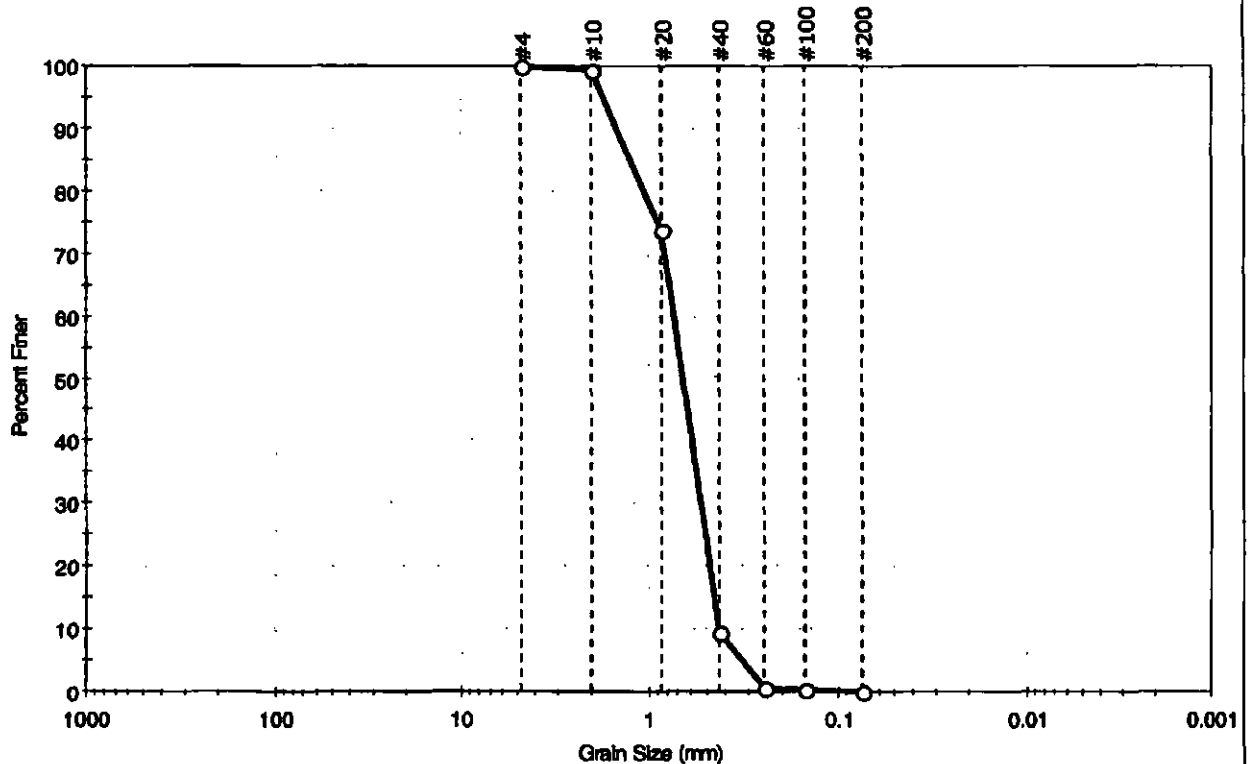
Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---



| | | |
|---------------------------------------|-----------------------|-----------------|
| Client: U.S. Army Corps of Engineers | Project No: GTX-10487 | |
| Project: Kennebec River | | |
| Location: --- | Sample Type: bag | Tested By: jbr |
| Boring ID: --- | Test Date: 01/04/11 | Checked By: jdt |
| Sample ID: Kennebec E | Test Id: 202157 | |
| Depth: --- | | |
| Test Comment: --- | | |
| Sample Description: Moist, brown sand | | |
| Sample Comment: --- | | |

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



| % Cobble | % Gravel | % Sand | % Silt & Clay Size |
|----------|----------|--------|--------------------|
| — | — | 99.9 | 0.1 |

| Sieve Name | Sieve Size, mm | Percent Finer | Spec. Percent | Complies |
|------------|----------------|---------------|---------------|----------|
| #4 | 4.75 | 100 | | |
| #10 | 2.00 | 100 | | |
| #20 | 0.85 | 74 | | |
| #40 | 0.42 | 10 | | |
| #60 | 0.25 | 1 | | |
| #100 | 0.15 | 0 | | |
| #200 | 0.075 | 0 | | |

Coefficients

| | |
|-----------------------------|-----------------------------|
| D ₈₅ = 1.2316 mm | D ₃₀ = 0.5297 mm |
| D ₆₀ = 0.7319 mm | D ₁₅ = 0.4507 mm |
| D ₅₀ = 0.6571 mm | D ₁₀ = 0.4271 mm |
| C _u = 1.714 | C _c = 0.898 |

Classification

ASTM Poorly graded sand (SP)

AASHTO Stone Fragments, Gravel and Sand (A-1-b (0))

Sample/Test Description

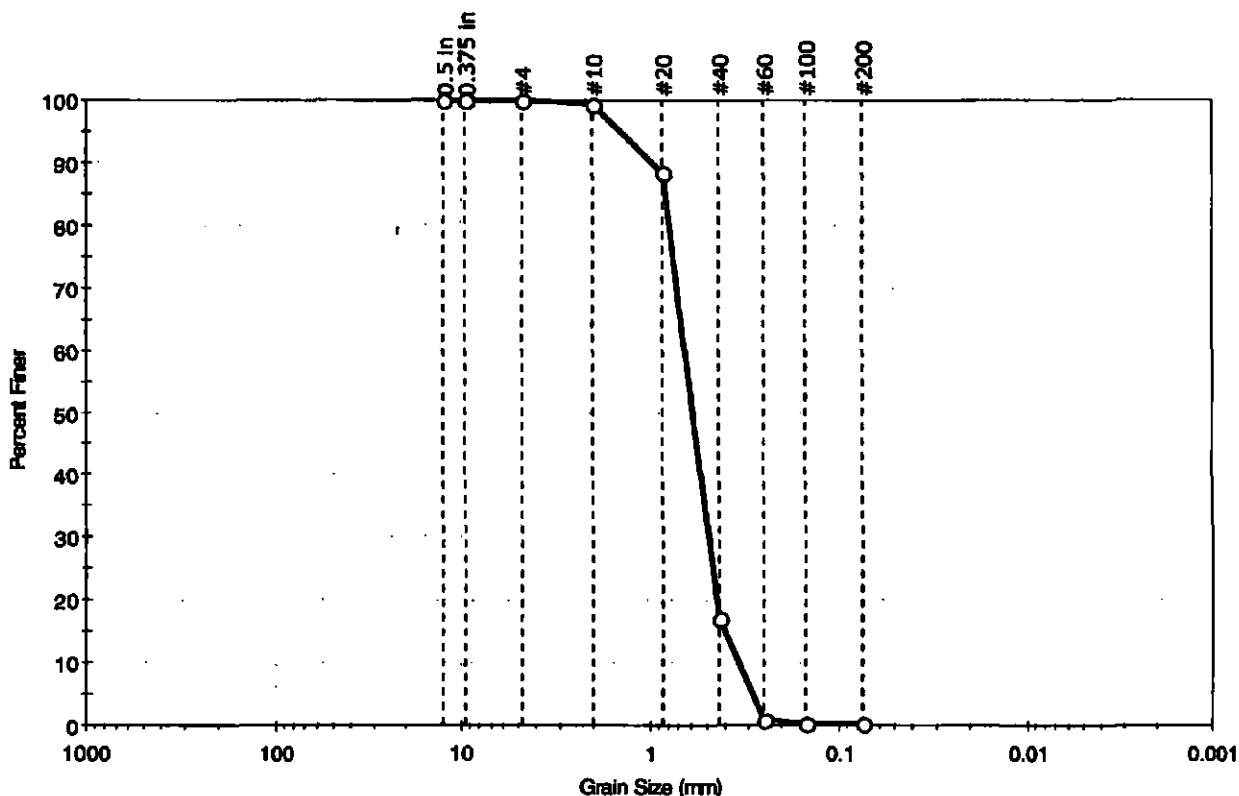
Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---



| | |
|---------------------------------------|-----------------------|
| Client: U.S. Army Corps of Engineers | Project No: GTX-10487 |
| Project: Kennebec River | |
| Location: --- | |
| Boring ID: --- | Sample Type: bag |
| Sample ID: Kennebec F | Test Date: 01/04/11 |
| Depth: --- | Test Id: 202158 |
| Test Comment: --- | Tested By: jbr |
| Sample Description: Moist, brown sand | Checked By: jdt |
| Sample Comment: --- | |

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



| % Cobble | % Gravel | % Sand | % Silt & Clay Size |
|----------|----------|--------|--------------------|
| — | 0.1 | 99.6 | 0.3 |

| Sieve Name | Sieve Size, mm | Percent Finer | Spec. Percent | Complies |
|------------|----------------|---------------|---------------|----------|
| 0.5 in | 12.50 | 100 | | |
| 0.375 in | 9.50 | 100 | | |
| #4 | 4.75 | 100 | | |
| #10 | 2.00 | 99 | | |
| #20 | 0.85 | 88 | | |
| #40 | 0.42 | 17 | | |
| #60 | 0.25 | 1 | | |
| #100 | 0.15 | 0 | | |
| #200 | 0.075 | 0 | | |

Coefficients

| | |
|-----------------------------|-----------------------------|
| D ₈₅ = 0.8219 mm | D ₃₀ = 0.4818 mm |
| D ₆₀ = 0.6448 mm | D ₁₅ = 0.3968 mm |
| D ₅₀ = 0.5851 mm | D ₁₀ = 0.3364 mm |
| C _u = 1.917 | C _c = 1.070 |

Classification

ASTM Poorly graded sand (SP)

AASHTO Stone Fragments, Gravel and Sand (A-1-b (0))

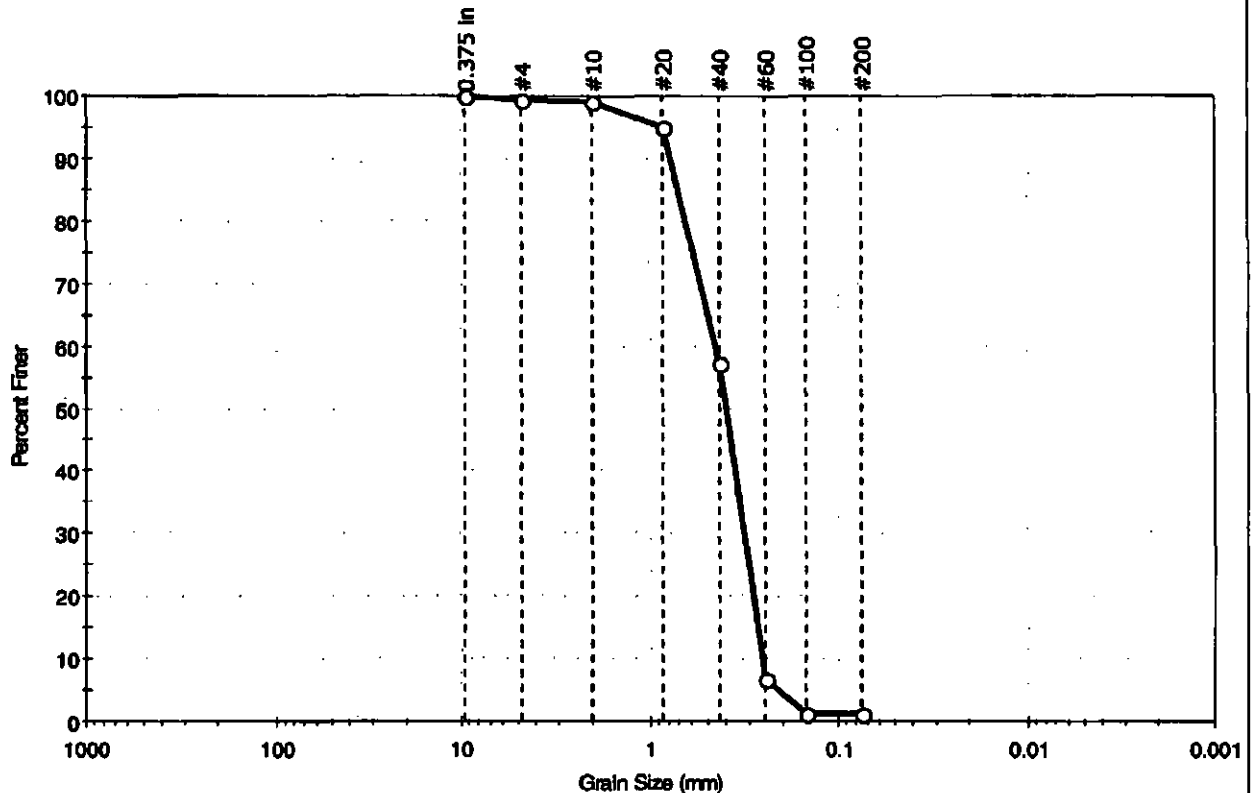
Sample/Test Description

Sand/Gravel Particle Shape : ---
Sand/Gravel Hardness : ---



| | |
|---------------------------------------|-----------------------|
| Client: U.S. Army Corps of Engineers | Project No: GTX-10487 |
| Project: Kennebec River | |
| Location: --- | |
| Boring ID: --- | Sample Type: bag |
| Sample ID: Kennebec H | Test Date: 01/04/11 |
| Depth: --- | Test Id: 202159 |
| Test Comment: --- | Tested By: jbr |
| Sample Description: Moist, brown sand | Checked By: jdt |
| Sample Comment: --- | |

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



| %Cobble | %Gravel | %Sand | %Silt & Clay Size |
|---------|---------|-------|-------------------|
| — | 0.4 | 98.5 | 1.1 |

| Sieve Name | Sieve Size, mm | Percent Finer | Spec. Percent | Complies |
|------------|----------------|---------------|---------------|----------|
| 0.375 in | 9.50 | 100 | | |
| #4 | 4.75 | 100 | | |
| #10 | 2.00 | 99 | | |
| #20 | 0.85 | 95 | | |
| #40 | 0.42 | 57 | | |
| #60 | 0.25 | 7 | | |
| #100 | 0.15 | 1 | | |
| #200 | 0.075 | 1 | | |

Coefficients

| | |
|-----------------------------|-----------------------------|
| D ₈₅ = 0.7063 mm | D ₃₀ = 0.3191 mm |
| D ₆₀ = 0.4462 mm | D ₁₅ = 0.2727 mm |
| D ₅₀ = 0.3935 mm | D ₁₀ = 0.2588 mm |
| C _u = 1.724 | C _c = 0.882 |

Classification

ASTM Poorly graded sand (SP)

AASHTO Fine Sand (A-3 (0))

Sample/Test Description

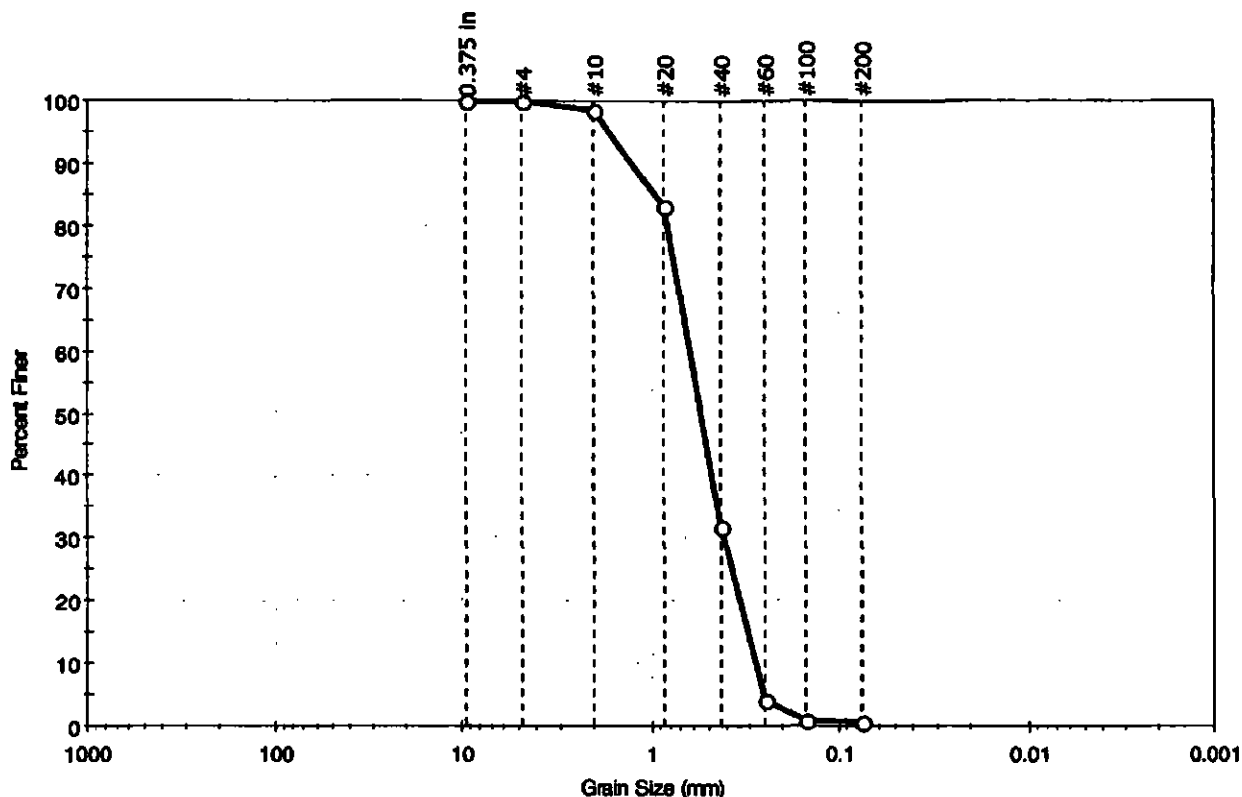
Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---



| | | |
|---------------------------------------|-----------------------|-----------------|
| Client: U.S. Army Corps of Engineers | Project No: GTX-10487 | |
| Project: Kennebec River | | |
| Location: --- | Sample Type: bag | Tested By: jbr |
| Boring ID: --- | Test Date: 01/04/11 | Checked By: jdt |
| Sample ID: Kennebec I | Test Id: 202160 | |
| Depth: --- | | |
| Test Comment: --- | | |
| Sample Description: Moist, brown sand | | |
| Sample Comment: --- | | |

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



| % Cobble | % Gravel | % Sand | % Silt & Clay Size |
|----------|----------|--------|--------------------|
| — | 0.1 | 99.4 | 0.5 |

| Sieve Name | Sieve Size, mm | Percent Finer | Spec. Percent | Complies |
|------------|----------------|---------------|---------------|----------|
| 0.375 in | 9.50 | 100 | | |
| #4 | 4.75 | 100 | | |
| #10 | 2.00 | 99 | | |
| #20 | 0.85 | 83 | | |
| #40 | 0.42 | 32 | | |
| #60 | 0.25 | 4 | | |
| #100 | 0.15 | 1 | | |
| #200 | 0.075 | 1 | | |

Coefficients

| | |
|-----------------------------|-----------------------------|
| D ₈₅ = 0.9387 mm | D ₃₀ = 0.4093 mm |
| D ₆₀ = 0.6209 mm | D ₁₅ = 0.3075 mm |
| D ₅₀ = 0.5424 mm | D ₁₀ = 0.2795 mm |
| C _u = 2.221 | C _c = 0.965 |

Classification

ASTM Poorly graded sand (SP)

AASHTO Stone Fragments, Gravel and Sand (A-1-b (0))

Sample/Test Description

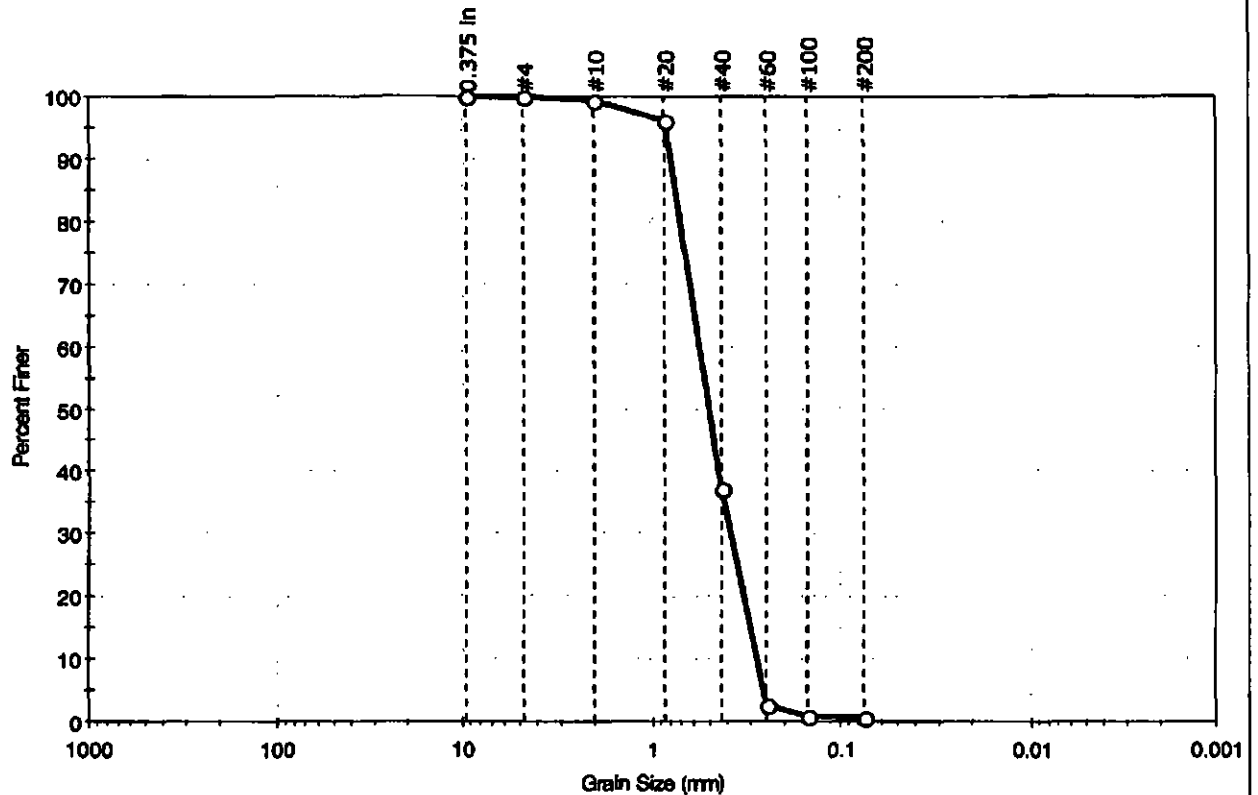
Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---



| | | |
|---------------------------------------|-----------------------|-----------------|
| Client: U.S. Army Corps of Engineers | Project No: GTX-10487 | |
| Project: Kennebec River | | |
| Location: --- | Sample Type: bag | Tested By: jbr |
| Boring ID: --- | Test Date: 01/04/11 | Checked By: jdt |
| Sample ID: Disposal Site | Test Id: 202161 | |
| Depth: --- | | |
| Test Comment: --- | | |
| Sample Description: Moist, brown sand | | |
| Sample Comment: --- | | |

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



| % Cobble | % Gravel | % Sand | % Silt & Clay Size |
|----------|----------|--------|--------------------|
| — | 0.1 | 99.4 | 0.5 |

| Sieve Name | Sieve Size, mm | Percent Finer | Spec. Percent | Complies |
|------------|----------------|---------------|---------------|----------|
| 0.375 in | 9.50 | 100 | | |
| #4 | 4.75 | 100 | | |
| #10 | 2.00 | 99 | | |
| #20 | 0.85 | 96 | | |
| #40 | 0.42 | 37 | | |
| #60 | 0.25 | 3 | | |
| #100 | 0.15 | 1 | | |
| #200 | 0.075 | 0 | | |

Coefficients

| | |
|-----------------------------|-----------------------------|
| D ₈₅ = 0.7457 mm | D ₃₀ = 0.3805 mm |
| D ₆₀ = 0.5556 mm | D ₁₅ = 0.3026 mm |
| D ₅₀ = 0.4939 mm | D ₁₀ = 0.2803 mm |
| C _u = 1.982 | C _c = 0.930 |

Classification

ASTM Poorly graded sand (SP)

AASHTO Stone Fragments, Gravel and Sand (A-1-b (0))

Sample/Test Description

Sand/Gravel Particle Shape : ---
Sand/Gravel Hardness : ---

Friends of Merrymeeting Bay

P.O. Box 233

Richmond, ME 04357

207-666-3372

www.friendsofmerrymeetingbay.org

March 19, 2011

Comments via E-mail

Robert L. Green, Jr., Project Manager
Division of Land Resource Regulation, Bureau of Land and Water Quality
Maine Department of Environmental Protection
312 Canco Road, Portland, Maine 04103
Robert.Green@maine.gov

RE: US Army Corps of Engineers NRPA/CWA Section 401 permit application for Maintenance Dredging of the Kennebec South of Bath, Maine with disposal in the Kennebec Narrows in 95-100 feet of water north of Bluff Head.

Dear Bob,

Please accept these Friends of Merrymeeting Bay (FOMB) comments regarding the USACE dredge/disposal project referenced above. We also incorporate by reference those comments submitted by FOMB member Dot Kelly. FOMB respectfully requests intervenor status in this proceeding.

Friends of Merrymeeting Bay is a membership based 501(c)(3) organization formed in 1975 whose mission is to preserve, protect and enhance the unique ecosystems of Merrymeeting Bay. FOMB accomplishes this mission through research, advocacy, education and land protection. FOMB members use the proposed project area for recreational and commercial fishing purposes, navigation, scientific study, education and work actively to protect valuable habitat in and near the project area.

The Bay is the only body of water in Maine providing spawning and nursery habitat to all twelve diadromous fish species found in the Gulf of Maine. Some of these, shortnose sturgeon and Atlantic salmon are endangered species while others, i.e. Atlantic sturgeon, rainbow smelt and alewives are threatened or species of concern. Merrymeeting Bay is the largest staging area north of Chesapeake Bay for migratory waterfowl and is home to about a dozen rare plant species living in the inter-tidal zone. The Bay has the second highest concentration of bald eagles in the state. Our organization and members are clearly affected by the proposed project and have a direct and substantial stake in the outcome. The proposed project area is not far downstream of Merrymeeting Bay and is part of the Kennebec River transit corridor through which every fish and marine mammal heading to or from the Bay and tributary points upstream must pass.

While Ms. Kelly provides great detail in a number of her comments particularly around quantitative and qualitative characteristics of spoils and how they effect the lower Kennebec, we will limit our current comments to:

1. USACE violations of state water quality statute-past and proposed.
2. Proposed downgrade in classification-Maine and Clean Water Act issues.
3. 40 CFR Section 404 (b)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material.
4. Endangered Species and Marine Mammal Protection Acts.

We reserve the right to present in future proceedings, discussion and evidence covered by of any or all of the following **PERTINENT LAWS, REGULATIONS, AND DIRECTIVES:**

Clean Water Act, as amended (33 U.S.C. 1251 et. seq.)
Code of Federal Regulation, Title 40 Part 230 Section 404 (b)(1)
Marine Protection Research and Sanctuaries Act of 1972 (33 U.S.C. 1401 et seq.)
Code of Federal Regulation, Title 33, Parts 335 through 338
National Environmental Policy Act of 1969 (42 U.S.C. 4321-4347)
Fish and Wildlife Coordination Act (16 U.S.C. 661-667e)
Fish and Wildlife Act of 1956 (16 U.S.C. 742a, et. seq.)
Migratory Marine Game-Fish Act (16 U.S.C. 760c-760g)
Coastal Zone Management Act of 1972 (16 U.S.C. 1456)
National Historic Preservation Act of 1966 (16 U.S.C. 470 et seq.)
Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.)
Marine Mammal Protection act of 1972, as amended (16 U.S.C. 1361 et seq.)
Clean Air Act, as amended (42 U.S.C. 7401 et. seq.)
Estuary Protection Act (16 U.S.C. 1221 et. seq.)
Federal Water Project Recreation Act, as amended (16 U.S.C. 460L-12 et. seq.)
Land and Water Conservation Fund Act of 1965, as amended (16 U.S.C. 460L et. seq.)
Magnuson-Stevens Fishery Conservation and Management Act as amended by the Sustainable Fisheries Act of 1996 (16 U.S.C. 1801 et seq.)
Water Resources Development Acts
Executive Order 11988, Floodplain Management, 24 May 1977
Executive Order 11990, Protection of Wetlands, 24 May 1977
Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations, 11 February 1994

1. USACE violations of state water quality statute-past and proposed.

Title 38, §469 of Maine Statute classifies the Phippsburg waters of this proposed disposal site as SA. The site is part of an SA corridor encompassing the entire Kennebec within Phippsburg [(1) *Tidal waters east of longitude 69°-50'-05" W. and west of longitude 69°-47'-00"W. – Class SA.*] and Georgetown. It is unclear whether SA waters extend north to the Chops where Class B begins, whether estuarine waters change to SB in Bath or whether the northerly portion containing the dredge site remains unclassified.

In any case, the area of possible spoils discharge is SA. As defined in 38MRSA §465-B, there can be no direct discharge of pollutants to Class SA waters in this situation.

1. Class SA waters. Class SA shall be the highest classification and shall be applied to waters which are outstanding natural resources and which should be preserved because of their ecological, social, scenic, economic or recreational importance.

A. Class SA waters must be of such quality that they are suitable for the designated uses of recreation in and on the water, fishing, aquaculture, propagation and harvesting of shellfish, navigation and as habitat for fish and other estuarine and marine life. The habitat must be characterized as free-flowing and natural. [2003, c. 227, §6 (AMD) .]

B. The estuarine and marine life, dissolved oxygen and bacteria content of Class SA waters shall be as naturally occurs. [1985, c. 698, §15 (NEW) .]

C. There may be no direct discharge of pollutants to Class SA waters, except for the following:

(1) Storm water discharges that are in compliance with state and local requirements;

(2) Discharges of aquatic pesticides approved by the department for the control of mosquito-borne diseases in the interest of public health and safety using materials and methods that provide for protection of nontarget species. When the department issues a license for the discharge of aquatic pesticides authorized under this subparagraph, the department shall notify the municipality in which the application is licensed to occur and post the notice on the department's publicly accessible website; and

*(3) An overboard discharge licensed prior to January 1, 1986 if no practicable alternative exists. [2009, c. 654, §7 (AMD) .]
[2009, c. 654, §7 (AMD) .]*

In 2006, the US Supreme Court in *SD Warren v. Maine Board of Environmental Protection* discussed and ruled on the issues and definitions of discharge and pollutants. [*S. D. Warren Co. v. Me. Bd. of Env'tl. Prot.*, 126 S. Ct. 1843 (2006)]. Here they were dealing only with the movement of water through a dam and still found this to be a discharge of a pollutant:

Congress passed the Clean Water Act to restore and maintain the chemical, physical, and biological integrity of the Nation's waters,. 33 U. S. C. §1251(a); see also PUD No. 1, 511 U. S., at 714, the national goal being to achieve water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water. 33 U. S. C. §1251(a)(2). To do this, the Act does not stop at controlling the addition of pollutants, but deals with pollution generally, see §1251(b), which Congress defined to mean the man-made or man-induced alteration of the chemical, physical, biological, and radiological integrity of water. §1362(19).

There is simply no question then that dredging up sediment from one place, moving it to and discharging it in another (*man-made or man-induced alteration of the chemical, physical and, biological integrity of water*) easily fits the definition making such an event subject to 401 water quality certification and a MEPDES permit.

Even if the disposal area waters were down-graded to Class SB, disposal of dredging spoils would not be permitted. It also appears unlikely that even dredging should be a permitted activity in SB waters:

2. Class SB waters. *Class SB waters shall be the 2nd highest classification.*

A. *Class SB waters must be of such quality that they are suitable for the designated uses of recreation in and on the water, fishing, aquaculture, propagation and harvesting of shellfish, industrial process and cooling water supply, hydroelectric power generation, navigation and as habitat for fish and other estuarine and marine life. The habitat must be characterized as unimpaired.* [2003, c.227, §7 (AMD).]

B. *The dissolved oxygen content of Class SB waters must be not less than 85% of saturation. Between May 15th and September 30th, the numbers of enterococcus bacteria of human and domestic animal origin in these waters may not exceed a geometric mean of 8 per 100 milliliters or an instantaneous level of 54 per 100 milliliters. In determining human and domestic animal origin, the department shall assess licensed and unlicensed sources using available diagnostic procedures. The numbers of total coliform bacteria or other specified indicator organisms in samples representative of the waters in shellfish harvesting areas may not exceed the criteria recommended under the National Shellfish Sanitation Program, United States Food and Drug Administration.* [2005, c.409, §3 (AMD).]

C. *Discharges to Class SB waters may not cause adverse impact to estuarine and marine life in that the receiving waters must be of sufficient quality to support all estuarine and marine species indigenous to the receiving water without detrimental changes in the resident biological community. There may be no new discharge to Class SB waters that would cause closure of open shellfish areas by the Department of Marine Resources. For the purpose of allowing the discharge of aquatic pesticides approved by the department for the control of mosquito-borne diseases in the interest of public health and safety, the department may find that the discharged effluent will not cause adverse impact to estuarine and marine life as long as the materials and methods used provide protection for nontarget species. When the department issues a license for the discharge of aquatic pesticides authorized under this paragraph, the department shall notify the municipality in which the application is licensed to occur and post the notice on the department's publicly accessible website.* [2007, c.291, §7 (AMD).]
[2007, c.291, §7 (AMD).]

Ms. Kelly has provided ample evidence of the smothering effect that settled fines from past discharges creates. It is quite likely this as an adverse effect on the resident shellfish and vegetation communities. She has also pointed out gaps in testing. There has been no discussion by the Corps of their sediment data, nor findings made available to the public in time for analyses.

It appears USACOE has been in violation of 401 permits during past dredging and disposal episodes [at least as long as the reach has been classified SA]. Requirements for discharge of spoils cannot be met under SA or SB conditions. Permits must be denied for this site.

2. Proposed downgrade in classification-Maine and Clean Water Act issues.

Anti-degradation language under both Maine law [38 MRSA §464] and the Clean Water Act prohibits the downgrade of a waterbody classification without first conducting a Use Attainability Analysis [UAA], submitting the UAA to the EPA for review and receiving approval for the proposed reclassification from the federal agency. We have been told there will be a proposed downgrade to SB of the Phippsburg river section now SA contained in an upcoming Omnibus bill before the legislature. Without at least a 45 day public notice [the federal standard], the legislature simply cannot reclassify a waterbody. Reclassification is also governed by 38 MRSA §464:

2. Procedures for reclassification. *Reclassification of state waters shall be governed by the following provisions.*

A. *Upon petition by any person or on its own motion, the board may initiate, following public notice, and the commissioner shall conduct classification studies and investigations. Information collected during these studies and investigations must be made available to the public in an expeditious manner. After consultation with other state agencies and, where appropriate, individuals, citizen groups, industries, municipalities and federal and interstate water pollution control agencies, the board may propose changes in water classification. [1989, c. 890, Pt. A, §40 (AFF) ; 1989, c. 890, Pt. B, §54 (AMD) .]*

B. *The board shall hold public hearings in the affected area, or reasonably adjacent to the affected area, for the purposes of presenting to all interested persons the proposed classification for each particular water body and obtaining public input. [1989, c. 890, Pt. A, §40 (AFF) ; 1989, c. 890, Pt. B, §54 (AMD) .]*

C. *The board may recommend changes in classification it deems necessary to the Legislature. [1985, c. 698, §15 (NEW) .]*

D. *The Legislature shall have sole authority to make any changes in the classification of the waters of the State. [1985, c. 698, §15 (NEW) .]
[1989, c. 890, Pt. A, §40 (AFF) ; 1989, c. 890, Pt. B, §54 (AMD) .]*

2-A. Removal of designated uses; creation of subcategories of designated uses. *Removal of designated uses and creation of subcategories of designated uses are governed by the provisions of this subsection and 40 Code of Federal Regulations, Part 131, as amended.*

A. *The board must conduct a use attainability analysis:*

(1) *Prior to proposing to the Legislature a designated use of a specific water body that does not include the uses specified in the Federal Water Pollution Control Act, Public Law 92-500, Section 101(a)(2), as amended; or*

(2) *Prior to proposing to the Legislature the removal of a designated use or the adoption of a subcategory of such a designated use that requires less stringent criteria. [1993, c. 344, §1 (NEW) .]*

Until such time as the EPA has approved a UAA proposing a lower classification, this reach of water shall remain SA and discharge of pollutants are prohibited.

3. 40 CFR Section 404 (b)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material.

§404 specifically governs disposal specifications for dredged material. Special aquatic sites include wetlands, mudflats and vegetated shallows. While discharges of spoils are planned for deep water, tidal oscillations move discharges up and downstream and distribute discharged sediments laterally across the river effecting special aquatic sites. No discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem.

40 CFR § 230.10 Section 404 (b)(1) Restrictions on discharge.

Note: Because other laws may apply to particular discharges and because the Corps of Engineers or State 404 agency may have additional procedural and substantive requirements, a discharge complying with the requirement of these Guidelines will not automatically receive a permit.

Although all requirements in §230.10 must be met, the compliance evaluation procedures will vary to reflect the seriousness of the potential for adverse impacts on the aquatic ecosystems posed by specific dredged or fill material discharge activities.

(a) Except as provided under section 404(b)(2), no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences.

(1) For the purpose of this requirement, practicable alternatives include, but are not limited to:

(i) Activities which do not involve a discharge of dredged or fill material into the waters of the United States or ocean waters;

(ii) Discharges of dredged or fill material at other locations in waters of the United States or ocean waters;

(2) An alternative is practicable if it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes. If it is otherwise a practicable alternative, an area not presently owned by the applicant which could reasonably be obtained, utilized, expanded or managed in order to fulfill the basic purpose of the proposed activity may be considered.

(3) Where the activity associated with a discharge which is proposed for a special aquatic site (as defined in subpart E) does not require access or proximity to or siting within the special aquatic site in question to fulfill its basic purpose (i.e., is not "water

dependent"), practicable alternatives that do not involve special aquatic sites are presumed to be available, unless clearly demonstrated otherwise. In addition, where a discharge is proposed for a special aquatic site, all practicable alternatives to the proposed discharge which do not involve a discharge into a special aquatic site are presumed to have less adverse impact on the aquatic ecosystem, unless clearly demonstrated otherwise.

(4) For actions subject to NEPA, where the Corps of Engineers is the permitting agency, the analysis of alternatives required for NEPA environmental documents, including supplemental Corps NEPA documents, will in most cases provide the information for the evaluation of alternatives under these Guidelines. On occasion, these NEPA documents may address a broader range of alternatives than required to be considered under this paragraph or may not have considered the alternatives in sufficient detail to respond to the requirements of these Guidelines. In the latter case, it may be necessary to supplement these NEPA documents with this additional information.

(5) To the extent that practicable alternatives have been identified and evaluated under a Coastal Zone Management program, a section 208 program, or other planning process, such evaluation shall be considered by the permitting authority as part of the consideration of alternatives under the Guidelines. Where such evaluation is less complete than that contemplated under this subsection, it must be supplemented accordingly.

(b) No discharge of dredged or fill material shall be permitted if it:

(1) Causes or contributes, after consideration of disposal site dilution and dispersion, to violations of any applicable State water quality standard;

(2) Violates any applicable toxic effluent standard or prohibition under section 307 of the Act;

(3) Jeopardizes the continued existence of species listed as endangered or threatened under the Endangered Species Act of 1973, as amended, or results in likelihood of the destruction or adverse modification of a habitat which is determined by the Secretary of Interior or Commerce, as appropriate, to be a critical habitat under the Endangered Species Act of 1973, as amended. If an exemption has been granted by the Endangered Species Committee, the terms of such exemption shall apply in lieu of this subparagraph;

(4) Violates any requirement imposed by the Secretary of Commerce to protect any marine sanctuary designated under title III of the Marine Protection, Research, and Sanctuaries Act of 1972.

(c) Except as provided under section 404(b)(2), no discharge of dredged or fill material shall be permitted which will cause or contribute to significant degradation of the waters of the United States. Findings of significant degradation related to the proposed discharge shall be based upon appropriate factual determinations, evaluations, and tests

required by subparts B and G, after consideration of subparts C through F, with special emphasis on the persistence and permanence of the effects outlined in those subparts. Under these Guidelines, effects contributing to significant degradation considered individually or collectively, include:

- (1) Significantly adverse effects of the discharge of pollutants on human health or welfare, including but not limited to effects on municipal water supplies, plankton, fish, shellfish, wildlife, and special aquatic sites.*
 - (2) Significantly adverse effects of the discharge of pollutants on life stages of aquatic life and other wildlife dependent on aquatic ecosystems, including the transfer, concentration, and spread of pollutants or their byproducts outside of the disposal site through biological, physical, and chemical processes;*
 - (3) Significantly adverse effects of the discharge of pollutants on aquatic ecosystem diversity, productivity, and stability. Such effects may include, but are not limited to, loss of fish and wildlife habitat or loss of the capacity of a wetland to assimilate nutrients, purify water, or reduce wave energy; or*
 - (4) Significantly adverse effects of discharge of pollutants on recreational, aesthetic, and economic values.*
- (d) Except as provided under section 404(b)(2), no discharge of dredged or fill material shall be permitted unless appropriate and practicable steps have been taken which will minimize potential adverse impacts of the discharge on the aquatic ecosystem. Subpart H identifies such possible steps.*

q-1) Special aquatic sites means those sites identified in subpart E. They are geographic areas, large or small, possessing special ecological characteristics of productivity, habitat, wildlife protection, or other important and easily disrupted ecological values. These areas are generally recognized as significantly influencing or positively contributing to the general overall environmental health or vitality of the entire ecosystem of a region. (See Sec. 230.10(a)(3))40 CFR Part 230 Section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material

Subpart E--Potential Impacts on Special Aquatic Sites

Note: The impacts described in this subpart should be considered in making the factual determinations and the findings of compliance or non-compliance in subpart B.

Sec. 230.41 Wetlands.

- (a)(1) Wetlands consist of areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.*
- (2) Where wetlands are adjacent to open water, they generally constitute the transition*

to upland. The margin between wetland and open water can best be established by specialists familiar with the local environment, particularly where emergent vegetation merges with submerged vegetation over a broad area in such places as the lateral margins of open water, headwaters, rainwater catch basins, and groundwater seeps. The landward margin of wetlands also can best be identified by specialists familiar with the local environment when vegetation from the two regions merges over a broad area.

(3) Wetland vegetation consists of plants that require saturated soils to survive (obligate wetland plants) as well as plants, including certain trees, that gain a competitive advantage over others because they can tolerate prolonged wet soil conditions and their competitors cannot. In addition to plant populations and communities, wetlands are delimited by hydrological and physical characteristics of the environment. These characteristics should be considered when information about them is needed to supplement information available about vegetation, or where wetland vegetation has been removed or is dormant.

(b) Possible loss of values: The discharge of dredged or fill material in wetlands is likely to damage or destroy habitat and adversely affect the biological productivity of wetlands ecosystems by smothering, by dewatering, by permanently flooding, or by altering substrate elevation or periodicity of water movement. The addition of dredged or fill material may destroy wetland vegetation or result in advancement of succession to dry land species. It may reduce or eliminate nutrient exchange by a reduction of the system's productivity, or by altering current patterns and velocities. Disruption or elimination of the wetland system can degrade water quality by obstructing circulation patterns that flush large expanses of wetland systems, by interfering with the filtration function of wetlands, or by changing the aquifer recharge capability of a wetland. Discharges can also change the wetland habitat value for fish and wildlife as discussed in subpart D. When disruptions in flow and circulation patterns occur, apparently minor loss of wetland acreage may result in major losses through secondary impacts. Discharging fill material in wetlands as part of municipal, industrial or recreational development may modify the capacity of wetlands to retain and store floodwaters and to serve as a buffer zone shielding upland areas from wave actions, storm damage and erosion.

Sec. 230.42 Mud flats.

(a) Mud flats are broad flat areas along the sea coast and in coastal rivers to the head of tidal influence and in inland lakes, ponds, and riverine systems. When mud flats are inundated, wind and wave action may resuspend bottom sediments. Coastal mud flats are exposed at extremely low tides and inundated at high tides with the water table at or near the surface of the substrate. The substrate of mud flats contains organic material and particles smaller in size than sand. They are either unvegetated or vegetated only by algal mats.

(b) Possible loss of values: The discharge of dredged or fill material can cause changes in water circulation patterns which may permanently flood or dewater the mud flat or disrupt periodic inundation, resulting in an increase in the rate of erosion or accretion. Such changes can deplete or eliminate mud flat biota, foraging areas, and nursery areas.

Changes in inundation patterns can affect the chemical and biological exchange and decomposition process occurring on the mud flat and change the deposition of suspended material affecting the productivity of the area. Changes may reduce the mud flat's capacity to dissipate storm surge runoff.

Sec. 230.43 Vegetated shallows.

(a) Vegetated shallows are permanently inundated areas that under normal circumstances support communities of rooted aquatic vegetation, such as turtle grass and eelgrass in estuarine or marine systems as well as a number of freshwater species in rivers and lakes.

(b) Possible loss of values: The discharge of dredged or fill material can smother vegetation and benthic organisms. It may also create unsuitable conditions for their continued vigor by:

- (1) Changing water circulation patterns;*
- (2) releasing nutrients that increase undesirable algal populations;*
- (3) releasing chemicals that adversely affect plants and animals;*
- (4) increasing turbidity levels, thereby reducing light penetration and hence photosynthesis; and*
- (5) changing the capacity of a vegetated shallow to stabilize bottom materials and decrease channel shoaling. The discharge of dredged or fill material may reduce the value of vegetated shallows as nesting, spawning, nursery, cover, and forage areas, as well as their value in protecting shorelines from erosion and wave actions. It may also encourage the growth of nuisance vegetation.*

Alternative disposal sites with less adverse environmental effect than a restricted tidal riverine reach almost certainly include both upland and ocean sites. USACOE has provided no analyses of these options. Unless the proposed site can be shown to be more environmentally benign than alternatives, no discharging can be permitted here.

4. Endangered Species and Marine Mammal Protection Acts.

The proposed area is necessary habitat for shortnose sturgeon, Atlantic salmon and harbor seals. The fish are both listed as endangered species and seals are protected under the Marine Mammal Protection Act. Summer is when all of these species are most active in the river and at highest risk of harassment or harm both considered "take."

Endangered shortnose sturgeon reside primarily within the river system and they frequently transit the proposed project area. They tend to spawn near the head of tide on the Androscoggin River, winter off the mouth of the Eastern River and during the summer often move up and down the Kennebec River from Merrymeeting Bay to the

Sagadahoc Bay area just east of the Kennebec mouth. (Squiers, T., 1999. Research Report on the Shortnose and Atlantic Sturgeon. Maine Department of Marine Resources).

Atlantic sturgeon currently a candidate for ESA listing are well-known to use the river in the summer and are frequently seen jumping.

The Kennebec/Androscoggin drainage once was home to the greatest Atlantic salmon population in the northeast. Salmon traveled up the Kennebec above the 16 foot Caratunk Falls more than 100 miles from the sea and on the Androscoggin 80 miles from the sea to Rumford Falls [Atkins, 1867]. These majestic fish survived the river's damming hanging on and spawning in tributaries below Augusta including Bond Brook and Togus Stream. With the dam removed, they are back in the main stem spawning and attempting to travel further upriver. In 2010 only 4 salmon were trapped at Lockwood dam, first at the Kennebec and 10 were passed on the Androscoggin at Brunswick. Each fish killed or weakened at this point is critical to survival of the population. Adult salmon are returning to the river in the later summer. Alewives are out-migrating in mid-late summer. Atlantic sturgeon are leaving the river in late summer.

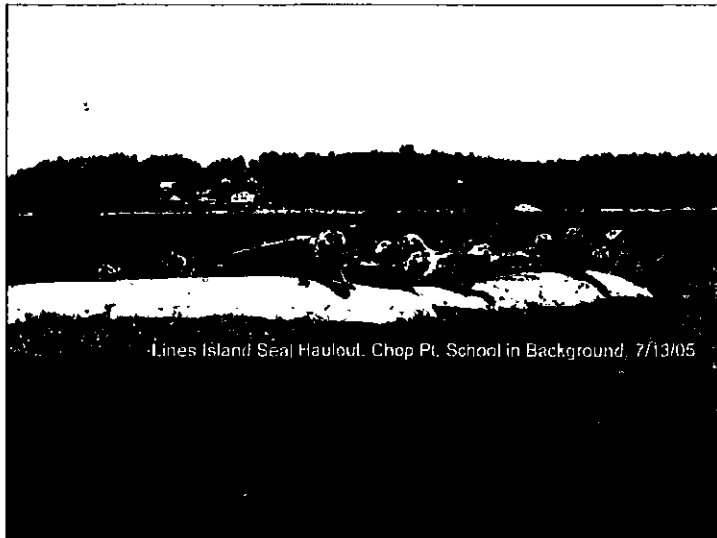
1996 Amendments [PL 104-267] to the Magnuson-Stevens Fishery Conservation and Management Act [MSA] [16 U.S.C. §1801 et seq. [1998], define Essential Fish Habitat [EFH] as "waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity." EFH has been designated for over a dozen federally managed species, including Atlantic salmon, which utilize the Kennebec-Sheepscot-Androscoggin-Merrymeeting Bay estuary system. FERC [and any other agency] is required to consult with NMFS on any action or proposed action FERC [or other agency] takes that funds, permits or undertakes which may adversely affect the EFH [NMFS, 2006. FERC Project 12666-000 Comments. National Marine Fisheries Service. National Oceanic and Atmospheric Administration, US Department of Commerce].

Millions of diadromous fish use this stretch of river:

NOAA trust species in Maine include anadromous and catadromous species such as Atlantic salmon, alewife, American shad, blueback herring, Atlantic herring, sea-run brown trout, rainbow smelt, striped bass, American eel, sea lamprey, Atlantic sturgeon, and the federally endangered shortnose sturgeon. Some estuarine and marine fish found in Maine are: menhaden, banded killifish, mummichug, 3-spine stickleback, haddock, Atlantic tomcod, bluefish, and 9-spine stickleback. [NOAA, CRC ME. Fact Sheet- NOAA, Coastal Resource Consideration Program, Maine Fact Sheet [on the Web at: http://response.restoration.noaa.gov/book_shelf/475_crc_state_ME.pdf]"

The NOAA CRC program works to protect and restore natural resources throughout Maine. However, the Androscoggin and Kennebec Rivers, as well as Merrymeeting Bay where the two rivers meet, are of special concern to NOAA. This is one of the most productive estuaries in Maine, providing important habitat for NOAA trust resources. The shortnose sturgeon, a federally endangered species, uses the Androscoggin River for spawning, nursery, and adult habitat. [NOAA, Ibid]"

There is a little studied but very prominent harbor seal population in this part of the river. A favorite haul out is a few hundred yards below the Chops on ledges just above Lines Island. As many as fourteen seals have been observed here at once. Prior to the Edwards Dam removal seals traveled as far north as Augusta, 30 miles. Now with the dam gone, seals have been observed at Waterville about 48 miles above the Chops. Still, the vicinity of Fiddlers Reach with its mixing of salt and freshwater and its currents and whirlpools appears to also be well populated no doubt for its qualities as a food resource.



Both dredging and disposal with their increased turbidity are likely to create a take of endangered and or threatened or marine mammal species in the river.

National Marine Fisheries Service/NOAA, Commerce 50 CFR § 216.3

Take means to harass, hunt, capture, collect, or kill, or attempt to harass, hunt, capture, collect, or kill any marine mammal. This includes, without limitation, any of the following: The collection of dead animals, or parts thereof; the restraint or detention of a marine mammal, no matter how temporary; tagging a marine mammal; the negligent or intentional operation of an aircraft or vessel, or the any other negligent or intentional act which results in disturbing or molesting a marine mammal; and feeding or attempting to feed a marine mammal in the wild.

Level A Harassment means any act of pursuit, torment, or annoyance which has the potential to injure a marine mammal or marine mammal stock in the wild.

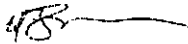
Level B Harassment means any act of pursuit, torment, or annoyance which has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering but which does not have the potential to injure a marine mammal or marine mammal stock in the wild.

In order to proceed with the proposed activities, USACE will need to consult with National Marine Fisheries Service (NMFS or NOAA Fisheries) and apply for Incidental Take Statements or Incidental Take Permits for the respective species. Risk will be substantially higher in the summer than during the winter months.

All in all, the USACE has much work to do before their project can begin. Under the current proposal there appears no legal way for the project to proceed as proposed. The Corps would do well to further investigate alternative means of dredging with less impact [as suggested by Ms. Kelly] as well as offshore or upland disposal options. The Navy might do well to investigate alternative pilotage solutions if that would truly make a difference as has been suggested. In our opinion MDEP cannot permit this project as it stands.

Thank you for your consideration.

Sincerely,



Ed Friedman, Chair

C.C.
Dot Kelly
Steve Hinchman, Esq.
Dave Nicholas, Esq.
Roger Fleming, Esq., Earthjustice
Mary Colligan, NMFS
Bill Kavanaugh, USACE
Doug Watts, FOKS
Steve Silva, EPA
Stew Fefer, USFWS

STEPHEN F. HINCHMAN
ATTORNEY AT LAW

March 30, 2011

U. S. Army Corps of Engineers
New England District
696 Virginia Road
Concord, MA 01742-2751
ATTN: Mr. Bill Kavanaugh, Programs Project Management Division

VIA EMAIL

Re: Maintenance and Advance Maintenance Dredging of the Federal Navigation Project in the Kennebec River, Maine

Dear Mr. Kavanaugh,

On behalf of the parties listed below (together as Phippsburg Commenters), please accept the following comments regarding the proposed Maintenance and Advance Maintenance Dredging of the Federal Navigation Project in the Kennebec River, Maine. The Phippsburg Commenters also wish to incorporate by reference comments submitted by the Town of Phippsburg Shellfish Commission, the Kennebec Estuary Land Trust, the Phippsburg Land Trust, and the Friends of Merrymeeting Bay.

Maintenance dredging of the Federal Navigation Channel in the lower Kennebec River is normally conducted in winter. The Army Corps of Engineers has proposed out-of-season dredging in August solely to allow the U.S.S. Spruance to exit from Bath Iron Works to the sea in September 2011. As explained below, the Phippsburg Commenters request that permits for the proposed summertime dredging be denied because it will have severe adverse impacts to virtually all other uses and users of the Kennebec River estuary and surrounding waters—including shellfish harvesting, lobstering, tourism and recreation, commercial and recreational fishing, swimming, boating, hiking, property owners, wildlife and other aquatic life – and because there are more cost effective and less environmentally damaging alternatives to enable delivery of the Spruance.

Additionally, the Phippsburg Commenters contend that the application cannot be permitted because the Corps has failed to meet its legal obligation under the Clean Water Act and the National Environmental Policy Act to analyze and disclose to the public information about the severe adverse impacts this project would cause, and because the proposed activity would violate Maine Water Quality Standards and would “take” species protected under the federal Endangered Species Act.

I. The Phippsburg Commenters and A Statement of Their Interests

Bob Cummings has lived on Drummors Bay since 1962, and has been a member of the Phippsburg Shellfish Committee for many years working to clean up the Kennebec River and reopen once-closed clamflats. He enjoys canoeing on Drummors Bay and the Kennebec River,

watching the seals at play in the Kennebec and the eagles that reside on Lee Island. In summer, his canoe is joined by many other small boaters who are fishing and recreating on the Kennebec River. He is concerned that the wildlife in this portion of the Kennebec River will be disturbed by impacts from the dredge operations; that clam flats in the lower part of Drummors Bay will be contaminated; that his boating experience will be negatively affected by the noise and disruption of the dredging; and that the fishing and guiding businesses that depend on this stretch of the Kennebec River will be adversely affected by the full-time dredging and disposal operation planned for August, 2011.

Capt. Ethan DeBery is a Phippsburg resident and owner and operator of Fish 'n' Trips Charters. Capt. DeBery operates the ferry to Seguin Island and conducts fishing charters around Popham and in the Kennebec River. The proposed dredging would impact his ferry and charter fishing operations by obstructing and preventing use of impacted waters during the height of the boating and fishing season. Additionally, the proposed activity would create noise, air pollution, water quality impacts, and disturb fish, wildlife and habitat – all of which would degrade the experience for his customers and detract from his business.

Brett Gilliam is a Phippsburg resident and commercial lobsterman. Like most Small Point lobstermen, Brett has traditionally fished the waters surrounding Jackknife Ledge (JKL) during the month of August. Brett generally runs 60 to 70 traps in the JKL waters and plans to continue fishing this area in the future. Dredging of the Popham Beach area and disposal of dredge spoils at JKL would prevent Brett from continuing to fish the area, and would result in destruction of lobster and lobster habitat, burial of his lobster gear under the sand, and cut lines and lost and damaged gear due to dredge, barge, tug, and attendant boat traffic.

Peggy Johannessen is owner and operator of Popham Beach Bed & Breakfast. The B&B is located in the old lifesaving station on Popham Beach at the mouth of the Kennebec River, directly in front of the proposed dredge operations. August is the B&B's busiest month of the year, and accounts for roughly a third of its business. Generally, the B&B has a full house all month long. Past dredging conducted during winter and spring months has been marked by very loud and persistent noise, night and day, but when few or no guests were present. Mrs. Johannessen is concerned that the proposed dredging during August will significantly affect her guests and business. In particular, she is concerned about noise impacts, which will occur night and day, as well as nighttime lighting and other impacts to the otherwise spectacular views of the ocean, islands and the Seguin Lighthouse.

Dot Kelly is a Phippsburg property owner, member of the Phippsburg Conservation Commission, and direct riverfront abutter to the disposal area in the Kennebec Narrows at Bluff Head. Mrs. Kelly uses the river and shores to swim and wade, is an avid river kayaker and observer of wildlife. She highly values the river's quiet, clean and natural setting, and likes to observe fishermen drifting with currents in the river. Past dredge and dumping events have disrupted this natural setting, both during the day and at night. Mrs. Kelly has also personally observed that during and after past dredging and disposal events, the entire river corridor in front of her house turned turbid and discolored, resulting in deposits of silt and muck along her shoreline and upstream and downstream areas. These impacts detract from her ability to use the area, and have driven away resident seals and other wildlife that she enjoys watching.

Dick LeMont is a Phippsburg resident, commercial clam harvester, a member of the Phippsburg Harbor Committee and, for 20 years, was chair of the Phippsburg Shellfish Committee. Mr. LeMont harvests clams throughout Phippsburg, including clamflats in Drummore Bay, the Upper Flats, Parker Head, Wyman's Bay, Atkins Bay, and the Popham/Small Point Beach and Morse/Sprague River areas. Mr. LeMont has observed siltation of clamflats due to past dredging, especially in Atkins Bay. He is concerned that siltation from the proposed action will cover the above listed clamflats and force closure of shellfishing under state and federal public health protocols. A closure due to dredging in August would impose severe negative impacts on Mr. LeMont's business and all other clammers in town: August is the most important month of the year for clammers because it generally has the best weather (i.e. fewest rain-induced flats closures) and long days for harvesting. Not only is their harvest volume highest in August, but clammers also get premium prices during the month – often double the price paid for clams in the winter and spring. Even short of a closure, siltation of the clamflats will cover air holes, making it difficult to find clams and reducing harvests. In addition, siltation in August is likely to have severe negative impacts on clam spat (juvenile clams), which must set near the top of the flats until they mature sufficiently to survive at deeper levels. Burial by a layer of silt and sediment will kill many of these juvenile clams.

Lawrence Pye is a Phippsburg resident, Phippsburg Town Selectman, and commercial lobster fisherman. Lawrence traditionally fishes the waters surrounding JKL in August and plans to continue fishing this area in the future. Dredging of the Popham beach area and disposal of dredge spoils at JKL would prevent Lawrence from continuing to fish the area, and would result in destruction of lobster habit, burial of his lobster gear under the sand, and cut lines and lost and damaged gear due to dredge, barge, tug, and attendant boat traffic.

Laura Sewall is a Phippsburg resident who lives on the Sprague River Marsh, very near to Seawall Beach in the Small Point area. Laura is an avid swimmer and surf kayaker and enjoys the water at Seawall Beach and other area beaches on most August days. Laura greatly values the aesthetic experience of a clean, quiet, scenic, and natural coastline. She is also the director of the Bates-Morse Mountain Conservation Area (BMMCA). Every summer season, nearly 16,000 people walk over Morse Mountain to go to Seawall Beach. The trail ends just inshore of Jack Knife Ledge. The turbidity in the water, and concerns about potential toxins stirred up by dredging and dumping would prevent Laura and the public users of BMMCA from engaging in recreational activities in and on the water, and would detract from their enjoyment of the scenic, quiet and natural experience that the area has to offer.

The Small Point Association (SPA) owns Seawall Beach, which is adjacent to Popham Beach. SPA opposes the proposal to conduct dredging operations in August and especially the proposed dumping of dredged material so close to the shores of Seawall Beach. SPA's opposition is based on the negative impact of this dumping to Small Point residents and members of the public who visit the beach via the Bates-Morse Mountain Conservation area for swimming, fishing, and boating. This project will occur at the height of annual usage of the beach and the waters adjacent to the beach. SPA is also opposed due to the negative impact the dumping will have on the rich wildlife habitat on Seawall Beach, which is one of the few remaining pristine beaches on the New England coast. In particular, early August is a time of

peak use of the beach by large populations of migratory birds that depend on feeding on the tidal flats at Seawall Beach as a final stop before non-stop flight thousands of miles south. SPA also stands in strong support of its Phippsburg neighbors whose livelihood from clamming, lobstering, and tourism, would be severely impacted by a major dredging project during the summer months.

II. Statutory and Regulatory Background

The proposed action must comply with both the Clean Water Act (CWA) and the National Environmental Policy Act (NEPA).

a. Clean Water Act

"Congress enacted the Clean Water Act to 'restore and maintain the chemical, physical, and biological integrity of the Nation's waters.'" *Town of Norfolk v. U.S. Army Corps of Engineers*, 968 F.2d 1438, 1445 (1st Cir. 1992) (quoting 33 U.S.C. § 1251(a)). Section 301 of the CWA prohibits discharge of pollutants, including dredged or fill materials, into navigable waters unless authorized by a permit. 33 U.S.C. §§ 1311(a), 1362(6). Navigable waters includes all "waters of the United States," *id.* at 1362(7), including adjacent and interconnected wetlands. 40 C.F.R. § 230.3(s)(7).

Section 404 of the CWA authorizes the Corps to issue or deny permits for the discharge of dredged and fill materials at specified disposal sites. 33 U.S.C. § 1344(a). Before issuing a permit, the Corps must ensure that the proposed action complies with CWA Section 404(b)(1) Guidelines issued by the Environmental Protection Agency ("EPA") in conjunction with the Secretary of the Army. *Id.* § 1344(b)(1); *see also* 33 C.F.R. § 320.4(a)(1) (section 404 permits will be denied for projects that do not comply with the EPA's 404(b)(1) Guidelines).

The 404(b)(1) Guidelines provide that:

[N]o discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences.

40 C.F.R. § 230.10(a) (known as the less environmentally damaging practicable alternative, or "LEDPA", standard). The review of practicable alternatives must include, at a minimum, activities that do not involve a discharge of dredged or fill materials into the navigable waters. *Id.* at § 230.10(a)(1)(i). "An alternative is practicable if it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes." *Id.* § 230.10(a)(2). For activities that involve filling of special aquatic sites such as wetlands, marshes, mud flats and clam flats, but which are not water dependent, there is a dual presumption that (1) "practicable alternatives that do not impact special aquatic sites are presumed to be available, unless clearly demonstrated otherwise." *id.* at 230.10(a)(3); and (2)

that such alternatives “are presumed to have less adverse impact on the aquatic ecosystem, unless clearly demonstrated otherwise.” *Id.*

The courts have held that “this presumption of practicable alternatives is very strong,” *Northwest Bypass Group v. U.S. Army Corps of Engineers*, 552 F.Supp. 2d 97, 108 (D.N.H. 2008), and that “the Corps may not issue a § 404 permit unless the applicant, ‘with independent verification by the Corps, provides detailed, clear and convincing evidence *proving*’ that an alternative with less adverse impact is ‘impracticable’”. *Greater Yellowstone Coal. v. Flowers*, 359 F.3d 1257, 1269 (10th Cir. 2004) (emphasis in original)(quoting *Utahns for Better Transp. v. U.S. Dept of Transp.*, 305 F.3d 1152, 1186-87 (10th Cir. 2003)). See also *id.* 359 F.3d at 1270 (collecting cases regarding applicant’s burden); EPA, *Guidelines for Specification of Disposal Sites for Dredged or Fill Material*, 45 Fed. Reg. 85336, 85339 (Dec. 24, 1980) (dual presumption imposes responsibility on applicant “to persuade the permitting authority that both of these presumptions have clearly been rebutted in order to pass the alternatives portion of these guidelines”). An applicant that fails to provide sufficient information to determine that a presumptively practicable alternative is in fact impracticable fails to meet their burden and is ineligible for a fill permit. *Bersani v. Robichaud*, 850 F.2d 36, 42 (2d Cir. 1988); see also EPA & Corps of Engineers, *Memorandum: Appropriate Level of Analysis Required for Evaluating Compliance with the Section 404(b)(1) Guidelines Alternatives Requirements*, at 3(b) (Jan. 12, 2009) (same).

Additionally, projects that involve discharge of fill materials may not be permitted if they cause or contribute to non-attainment of any applicable state water quality standard, 40 C.F.R. § 230.10(b)(1), or cause or contribute to significant degradation of waters of the U.S. *Id.* § 230.10(c). Effects contributing to significant degradation of the waters, individually or collectively, include adverse effects to human health or welfare (including due to impacts to shellfish, fish, wildlife and special aquatic sites), *id.* § 230.10(c)(1); adverse effects on life stages of aquatic life and spread of pollutants through bioaccumulation and other processes, *id.* § 230.10(c)(2); significant adverse effects on fish, wildlife, habitat, and wetlands, *id.* § 230.10(c)(3); or significant adverse effects on recreational, aesthetic, and economic values. *Id.* § 230.10(c)(4).

a. National Environmental Policy Act

Pursuant to both the CWA and the National Environmental Policy Act (“NEPA”), 42 U.S.C. § 4331 *et seq.*, the Corps must take a “hard look” at a proposed project, alternatives, and impacts. *Kleppe v. Sierra Club*, 427 U.S. 390, 410 n. 21 (1976); 45 Fed. Reg. at 85339. The hard look doctrine requires the permitting agency to “set forth sufficient information for the general public to make an informed evaluation, and for the decisionmaker to consider fully the environmental factors involved and to make a reasoned decision after balancing the risks of harm to the environment against the benefits to be derived from the proposed action.” *Sierra Club v. U.S. Army Corps of Eng.*, 701 F.2d 1011, 1029 (2d Cir. 1983) (quotations and citations omitted). The Corps review must ensure “the integrity of the process of decision by giving assurance that stubborn problems or serious criticisms have not been ‘swept under the rug.’” *Id.* (citing *Silva v. Lynn*, 482 F.2d 1282, 1285 (1st Cir. 1973)). “[W]here comments from responsible experts . . . disclose new or conflicting data or opinions . . . these comments may

not simply be ignored. There must be good faith, reasoned analysis in response.” *Silva*, 482 F.2d at 1285. *See also Alliance to Save the Mattaponi v. U.S. Army Corps of Engineers*, 606 F. Supp. 2d 121, 130 (D.D.C. 2009) (LEDPA review requires the Corps to “explain fully, based [on] an analysis adequate to the task, why other alternatives are either impracticable or more damaging”).

An action that significantly affects the quality of the human environment requires preparation of a full Environmental Impact Statement (“EIS”). 42 U.S.C. § 4332(2)(C). The term “significantly” requires consideration of both context and intensity; for site-specific actions determination of significance is determined based on the context of local impacts. 40 C.F.R. § 1508.27(a). Intensity refers to the degree of impact, and requires consideration of:

- Public health or safety;
- Unique characteristics of the area such as proximity to historic or cultural resources, park lands, wetlands, or ecologically critical areas;
- The degree of public controversy regarding the project;
- The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks;
- The relationship to other actions with individually insignificant but cumulatively significant impacts;
- The degree to which the action may adversely affect districts, sites, structures, or objects listed in or eligible for listing in the National Register of Historic Places;
- The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973; and
- Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.

40 C.F.R. § 1508.27(b).

III. Purpose and Need, Alternatives

The sole justification for this proposed out-of-season dredging in August is to enable a one-time egress of the U.S.S. Spruance from Bath Iron Works to the sea in September 2011. Because normal (winter season) dredging operations are permitted separately, out-of-season dredging is not necessary to permanently maintain the Federal Navigation Channel (FNC) in the Kennebec River. Accordingly, long-term maintenance of the FNC should not be considered as part of the purpose and need for this project, and issues related to long-term maintenance of the FNC must be excluded from the analysis.

Pursuant to both NEPA and the CWA, the Corps must evaluate all reasonable alternatives capable of meeting the basic project purpose – to enable the Spruance to transit the Kennebec River in September 2011. The Draft Environmental Assessment (EA) submitted as part of the Corp’s application for Maine state permits and 401 Certification fails to meet this requirement for the following reasons:

a. No Action Alternative

The Draft EA suggests that the No Action Alternative is not viable because it would prevent or delay sea trials and transits of the river by Navy, cargo ships and other deep draft vessels, eventually making the federal navigation channel totally impassable and causing negative economic impacts on the region. As noted above, however, regular maintenance of the FNC is separately permitted. Thus, the No Action Alternative would not cause any of the impacts suggested in the draft EA. Rather, the sole potential impact of the No Action Alternative would be to delay transit of the U.S.S. Spruance by no more than three months (until normal season dredging can begin in Nov. 2011).

In this case, however, there need be no delay. The Spruance can clearly exit the Kennebec River safely without dredging; it did so to conduct sea trials just last month as shown by the photograph in Figure 1. Thus, there is simply no need for emergency out-of-season dredging and all of the adverse impacts it would cause. The No Action Alternative is clearly practicable, less environmentally damaging, and cost effective – in fact it would save taxpayers



Figure 1: The U.S.S. Spruance seen leaving the mouth of the Kennebec River at Fort Popham on Feb. 18, 2011

approximately \$1 million. Because the No Action Alternative would not impact special aquatic sites, it is the Corps' burden under 40 C.F.R. § 230.10(a) to show that this presumptively available alternative is in fact not practicable, i.e. that the Navy is prohibited by law, or by some other reason, from using the same course and pilot as BIW did to exit the river this spring. Use of trained river pilots to help Navy ships navigate local hazards is a historic and global practice, and is presumably used by the Navy in other locations (and has been used on the Kennebec River in the past –

including for the Spruance). Unless the Navy can show why it is legally prohibited from using a local pilot, out of season dredging is not LEDPA and the Corps cannot issue a 404 permit under the Section 404b1 Guidelines. *See Alliance to Save the Mattaponi*, 606 F. Supp. 2d at 130 (LEDPA review requires the Corps to “explain fully, based [on] an analysis adequate to the task, why other alternatives are either impracticable or more damaging”).

b. Minimum Dredging and Upland Disposal

To the extent that out-of-season dredging is absolutely required to enable egress of the Spruance in September, the Corps must evaluate a low impact alternative that authorizes the least amount of dredging possible to help this one ship exit the river. For example, instead of advance dredging and over-dredging, as is currently proposed, the Corps must consider minimal dredging and alternative sand crest manipulation techniques that knock the wave crests into the adjacent troughs.

To the extent that any dredging is required in such an alternative, the Corps must consider upland disposal for dredge spoils. Because upland disposal is, by definition, non-water dependent, the dual presumption at 40 C.F.R. § 230.10(a) applies. To overcome this presumption, the Corps must do more than mention that an upland disposal site and non-federal sponsor need to be identified. The 404(b)(1) Guidelines strictly require that alternatives that do not involve discharge of fill materials are presumptively available unless and until the applicant proves otherwise by *clear and convincing evidence*. *Greater Yellowstone Coal.*, 359 F.3d at 1269. External alternatives must be considered and be utilized if available to fulfill the project's basic purpose. *Id.* at § 230.10(a)(2) (areas not owned by applicant must be considered if it can "reasonably be obtained, utilized, expanded or managed in order to fulfill the basic purpose of the proposed activity"). In order for an "external" alternative to be practicable, it must be reasonably available or obtainable; however, "the mere fact of ownership or lack thereof, does not necessarily determine reasonable availability." 45 Fed. Reg. at 85339.¹ In this case, based on current practice of upland disposal of dredge spoils by BIW using Reed & Reed General Contractors, the necessary equipment, land-based infrastructure, and trained personnel are all available for use in a scaled-back alternative. Moreover, the spoils likely have commercial value; sale of materials could defray some or all of the added cost of upland disposal. *But see* 45 Fed. Reg. at 85339 ("The mere fact that an alternative may cost somewhat more does not necessarily mean it is not practicable."). Additionally because use of sand from dredge spoils will displace other sand and gravel mining – which causes environmental impacts – environmental benefits and beneficial use would accrue from this alternative, thus meeting Corps' policy. Finally, the Corps must evaluate upland disposal and/or beach replenishment separately for each of the two proposed dredging locations.

c. Minimum Dredging and Offshore Disposal Using Existing Sites

To the extent that out-of-season dredging is absolutely required to enable egress of the Spruance and upland disposal is found, based on clear and convincing evidence, to be impracticable for one or both dredge sites, the Corps must evaluate a minimum impact approach designed to dredge just enough to help the Spruance exit the river, and to dispose of all spoils offshore where it will have the least possible impact on other uses, including shellfishing, lobstering, tourism and recreation, and wildlife.

As discussed below, dredging in August will have unacceptable impacts on virtually all other users and resources in the river aside from navigation. The Corps must evaluate an alternative designed to minimize these impacts. By dredging the least amount possible, it would reduce the duration and extent of dredging impacts to other resources and remove less material from the Kennebec River sand budget. By using pre-approved offshore disposal sites (such as

¹ As noted in the discussion of external alternatives in the preamble to the 1979 draft of the Guidelines, "Section 403(c)(1)(F) [of the CWA] specifically refers to other possible locations and methods of disposal, without limitations." EPA, *Guidelines for Specification of Disposal Sites for Dredged or Fill Material*, 44 Fed. Reg. 54222, 54224 (Sept. 18, 1979).

² Additionally, an EIS is warranted because the project will violate state water quality standards, 40 C.F.R. § 1508.27(b)(10), and will impact species protected under the Endangered Species Act. *Id.* § 1508.27(b)(9).

³ National Shellfish Sanitation Program, *Sanitary Survey and the Classification of Growing*

the pre-approved Portland Disposal Site), many of the impacts to lobstering, shellfishing, tourism and recreation, wildlife, and water quality would be averted.

d. Minimum Summertime Dredging

Finally, the Corps must evaluate minimal dredging during the summer, combined with normal maintenance dredging during the winter season when impacts are reduced. As with the above alternatives, the Corps must consider upland disposal and alternative offshore disposal sites that both minimize losses to the Kennebec River sand budget, yet also do not cause the severe environmental and economic effects from in-river and near-shore disposal as described in this document.

IV. Impacts to Tourism and Recreation, Fisheries, and Aesthetics

The Feb. 2011 Draft EA for this project was developed based on a 2002 EA that reviewed only winter dredging activities. The 2002 EA did not consider any summer uses of the area, such as tourism and recreation, lobster fishing, the commercial and recreational fin fishery, or other activities that make Phippsburg and the lower Kennebec River estuary a world class tourist destination and fishery resource. Perhaps this difference in seasons explains why the Draft EA concludes that maintenance dredging “is not anticipated to have any negative effects on social or economic resources,” Draft EA at 24, and why the March 1, 2011 Public Notice entirely omits any discussion of these critically important issues.

The findings in the Draft EA are patently untrue; the proposed month-long dredging during the height of a very short two-month summer season would likely have significant, intense, and severe impacts to the area’s tourism and recreation industry, to natural resource industries including lobster fishing, shellfishing, and striped fishing, and to the area’s incomparable environment and quality of life. An August dredging operation is fundamentally different than winter operations and the likely impacts to the Phippsburg economy and community (as well as to adjacent towns) would be simply devastating.

Failure to analyze and disclose these impacts violates NEPA. 42 U.S.C. § 4332(c). Failure to consider whether these impacts cause or contribute to significant degradation of waters of the U.S. – including adverse effects to human health, aquatic life, habitat, or recreational, aesthetic and economic values – violates the Clean Water Act. See 40 C.F.R. § 230.10(c).

a. Impacts to Tourism and Recreation

The Draft EA omits any mention of the incredible recreation and historic resources on the Phippsburg peninsula. Popham Beach State Park is one of the crown jewels of the Maine Park’s system, and is among the most heavily visited parks in the entire state. Together with Fort Popham, the Popham Colony historic site, Fort Baldwin, the Seguin Island Lighthouse, the Bates-Morse Mountain Conservation Area, and Seawall Beach, the project area offers some of

the best recreation opportunities in Maine. Visitors and locals alike come to enjoy the spectacular beaches, swimming, surf kayaking, fishing, sailing, motor boating, clamming, hiking, nature trails, historic sites, scenic ocean views and more. The tourism and recreation business is a mainstay of the local economy and supports a wide range of businesses including restaurants, gifts shops, hotels, B&B's, vacation cottages, campgrounds, retail outlets, water sports, boat tours, fishing charters, etc. August is the key month for each and every one of these businesses, and accounts for the bulk of their annual income.

The proposed action would involve up to five weeks of day and night operations beginning Aug. 1, 2011, using massive hopper dredges – essentially giant vacuums – located a just few hundred feet offshore of Popham Beach. Hopper dredging uses suction to lift material off the bottom, pumps it to the surface in slurry form, and then filters the slurry in floating barges. This activity will result in constant noise, visual impacts, air pollution, water quality impacts (both at the bottom and at the surface), disturbance of fish and wildlife, loss of habitat, take of endangered species, destruction of fishing gear, and a hazard to fishermen and boaters. All of these harms will occur immediately offshore of some of the most popular and scenic beaches in Maine and in some of the most heavily fished and recreated waters on the Maine Coast. Disposal of dredge spoils at Jackknife Ledge (JKL) will result in total suspended solids dispersed throughout the water column and surrounding areas, and will likely also impact nearby swimming areas, beaches, and mudflats in the Popham, Small Point, Morse River and Sprague River Marsh.

At the upstream Doubling Point dredge site and Bluff Head disposal site, kayakers, canoers, motor boaters, anglers, fishing guides, nature lovers, homeowners and tourists will be displaced by a massive dredging operation that will dominate the narrow river channel and make other uses difficult and dangerous – again operating day and night during the height of the season. Further, dredging operations will cause noise, air quality and water quality impacts that will harm and detract from all other uses of the river.

Clearly, the proposed action will have severe and intensive negative impacts upon all aspects of the recreational experience – swimming, boating, aesthetics, view, sound, air quality, wildlife, etc. – for virtually all visitors. One visits the shore to hear the sound of the surf and wind, not massive vacuum barges operating day and night. Coming during the most important month of a very short summer tourism season (which lasts all of two months) the economic impacts could well be devastating to many businesses that rely upon summer visitation. The degree of impact within this context is local but extreme: it will undercut the entire local economy. For this reason, the Corps must prepare an EIS to ensure that impacts are disclosed and that the public can provide informed comments to decision makers prior to any action. 40 C.F.R. §§ 1500.1(b), 1508.27(a).

In addition, the Corps must consider the potential that disposal of large volumes of sand at JKL may cause more permanent impacts by contributing to or exacerbating erosion of Popham Beach. As indicated by the map of the Popham Beach sediment gyre, currents push sediment towards the mouth of the Morse River. See Figure 2, *infra*. By adding sediment on the seaward and western edge of the sediment gyre, there is a chance that sediment loading of the Morse River sandbar will increase and recreate conditions that led to erosion of Popham Beach in recent

years. Specifically, build up of the sandbar at the mouth of the Morse River started by 2003, worsened in 2005, and continued to cause heavy erosion until the sand bars were broken in 2010. This unusual situation may well have been tied to use of the JKL site for disposal of dredge spoils. If additional dredging disposal from this project contributes sediment that rebuilds the sand bar system, the Popham Beach State Park Beach and bathhouse are very susceptible. The precautionary principle suggests that no further disposal at Jackknife ledge be done until strong scientific evidence proves that dumping at Jackknife ledge does not build the sandbar off the mouth of

the Morse River. This is exactly the type of high-level environmental risk and uncertainty that warrants preparation of an EIS prior to taking an action that could adversely affect the outstanding and irreplaceable natural, historic, and cultural resources at Popham Beach State Park. See 40 C.F.R. §§ 1508.27(b)(3, 5, 7, 8, & 10). Further analysis of this complex issue is also required by the CWA Section 404(b)(1) Guidelines. See 40 CFR 230.11 (a) ("Potential changes in substrate elevation and bottom contours shall be predicted on the basis of the proposed method, volume, location, and rate of discharge, as well as on the individual and combined effects of current pattern, water circulation, wind and wave action, and other physical factors that may affect the movement of the discharged material.").

The wide range of impacts and loss of values discussed above are examples of "Potential Effects on Human Use Characteristics" that "should be considered in making the factual determinations and findings of compliance or non-compliance" required by the 404(b)(1) Guidelines. 40 C.F.R. § Part 230, Subpart F. For instance, the Corps must analyze whether disposal of dredged or fill material will "adversely modify or destroy water use for recreation by changing turbidity, suspended particulates, temperature, dissolved oxygen, dissolved materials, toxic materials, pathogenic organisms, quality of habitat, and the aesthetic qualities of sight, taste, odor, and color." 40 C.F.R. § 230.52(b). Similarly, the Corps must review impacts to aesthetic values and quality of life, including actions that, as here, "can mar the beauty of natural aquatic ecosystems ... harmony or unity, visual distinctiveness or diversity of an area" by degrading water quality or causing visual impacts, noise, odor, air quality and other harms. *Id.* § 230.53. The Corps must also review impacts to parks, historic sites, and protected natural areas, and the loss of values that may affect such areas including modification of the aesthetic, educational, historical, recreational and/or scientific qualities. *Id.* § 230.54. Unless and until the Corps fully evaluates these impacts (and discloses the results of that analysis to the public) it cannot make the required finding of compliance or non-compliance, *Id.* § 230.10(c), and therefore cannot proceed with this project.

Figure 2: Popham Beach Sediment Gyre

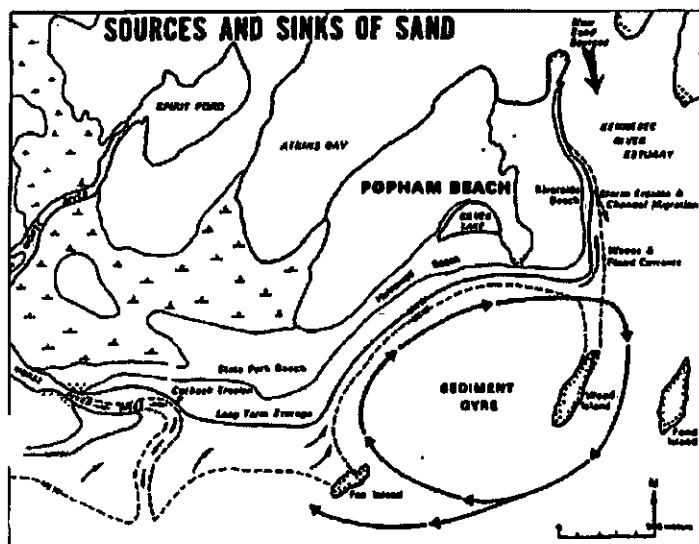


Figure 2.1. A map illustrating the clockwise circulation gyre that moves sand east of the Fox Islands from Popham Beach to Burnside Beach and eventually the Kennebec River. The map also suggests some sand bypasses the Fox Islands, moving in a westerly direction, on the seaward side to come ashore in the vicinity of the Morse River. From Goldschmidt and others (1989).

b. Impacts to Commercial and Recreational Fishing

The proposed activity would also impose significant losses on the area's commercial and recreational fishing industry. In summer, lobsters are highly abundant in the project area surrounding the Popham Dredge site and JKL dump site. JKL is part of the area's traditional fishing grounds, and is extensively fished by Small Point and Phippsburg lobstermen in August, including by several commenters here. Harvests from JKL make up a significant portion of their summer catch and thus their annual income.

Use of hopper vacuum dredges, barges and tugs, and dumping during the height of the lobster season will, literally, cut and bury the fishery. The proposed action will kill and disturb lobster, destroy habitat, cut lines, and cover lobster and gear in meters of sand and silt. The project will effectively prevent any fishing within the project area and a large buffer zone, will degrade fishing quality in adjacent areas, and will cause crowding of remaining fishing areas due to loss of the JKL fishing grounds. Coming during the prime fishing season in August, this will cause severe adverse impacts to the local lobstermen as well as businesses that depend upon the lobster industry, such as suppliers of bait and equipment and operators of lobster pounds. It is absolutely unconscionable that the draft EA would wholly ignore this localized, but nevertheless severe and major economic impact.

With the revival of water quality in the Kennebec River basin, clamming and other shellfishing has also become a significant component of the local economy. According to the Phippsburg Shellfish Committee, at least 40 families depend upon commercial shellfishing and derive the bulk of their income from harvest during the month of August – a time when demand and prices are at their highest. Based on past experiences, the proposed dredge and dumping operations will cause siltation of clamflats in Drummors Bay, the Upper Flats, Parker Head, Wyman's Bay, Atkins Bay, and the Popham/Small Point Beach and Morse/Sprague River areas. Siltation of the clamflats is almost certain to result in closure of certain highly productive shellfishing areas by the Department of Marine Resources (DMR) pursuant to its shellfish sanitation and public health protocols. Additionally, siltation of the clamflats will cover air holes, making clams difficult to find and reducing harvests. Closure of the clamflats or reduced harvesting in the month of August could cause up to \$400,000 in losses. Because that is such a large percentage of clambers' annual income, this impact would likely have major and irreversible impacts to those families and therefore to the entire community.

The Phippsburg Commenters are also concerned that heavy metals deposited in sediment due to years of industrial applications up and down the Kennebec River could potentially be dredged up and re-released into the river system and either drift ashore to affect clam flats in adjacent areas, or settle on the bottom and affect the tomalley in lobsters. As noted by DMR, siltation of clamflats will almost certainly result in closure to shellfishing until sanitation and toxicity testing can be done to ensure public health and safety. Because each day of new dredging could potentially release toxins, closures would have to remain in effect throughout the project period. Similarly, toxins may affect marketability of lobster harvests. In the past, shipments have been turned back from Europe/Asia due to identification of contaminants within the tomalley. Having such incidents occur can severely damage the marketability of a product

such as lobster, thus driving down dockside prices for harvesters. This type of uncertainty and significant risk to public health and safety further warrants preparation of an EIS. See 40 C.F.R. §§ 1508.27(b)(2, 4, & 5).

Both the Popham/JKL and upstream Doubling Point/Bluff Head dredge and disposal sites are also extensively used in August by commercial and recreational anglers fishing for stripers and groundfish. Dredge and disposal operations will devastate both fishing quality and the fishing experience, disturbing fish and fishermen alike. No one is going to pay a commercial guide to go fishing in the middle of an industrial dredging operation. As with the clambers and lobstermen, loss of the best month of a very short season will simply destroy many local guide businesses.

Individually and in combination, the proposed month-long dredging project, coming at the height of the summer season in August, will have major impacts upon the Phippsburg area natural resource economy. As with tourism and recreation, the degree of impact within this context is local but extreme and intense – and it will affect the entire local economy. For this reason, the Corps must prepare an EIS to ensure that impacts are disclosed and that the public can provide informed comments to decision makers prior to any action. 40 C.F.R. §§ 1500.1(b), 1508.27. Moreover, given the intensity of the impact to the Phippsburg community, we sincerely doubt that this project can be permitted pursuant to the 404(b)(1) Guidelines, 40 C.F.R. § Part 230, Subpart F.

Failure to make ANY information regarding these impacts available for public review prior to close of the comment period is unforgivable and a clear violation of NEPA and the CWA. As the permitting agency, the Corps must disclose “sufficient information for the general public to make an informed evaluation, and for the decisionmaker to consider fully the environmental factors involved and to make a reasoned decision after balancing the risks of harm to the environment against the benefits to be derived from the proposed action.” *Sierra Club v. U.S. Army Corps of Eng.*, 701 F.2d at 1029. These issues may not be ignored or ‘swept under the rug.’” *Id.* (citing *Silva v. Lynn*, 482 F.2d 1282, 1285 (1st Cir. 1973)). Rather, “[t]here must be good faith, reasoned analysis in response” to issues raised by commenters. *Silva*, 482 F.2d at 1285.² Failure to consider whether these impacts cause or contribute to significant degradation of waters of the U.S. – including adverse effects to human health, aquatic life, habitat, or recreational, aesthetic and economic values – also violates the Clean Water Act. See 40 C.F.R. § 230.10(c).

Accordingly, the Phippsburg Commenters request that the Corps not proceed with the proposed August dredging. It will cause severe and unnecessary harm to the entire economy and community, and to the area’s unparalleled natural beauty, wildlife, environment and quality of life.

² Additionally, an EIS is warranted because the project will violate state water quality standards, 40 C.F.R. § 1508.27(b)(10), and will impact species protected under the Endangered Species Act. *Id.* § 1508.27(b)(9).

V. Water Quality Violations

Pursuant to the 404(b)(1) Guidelines, no project can be permitted if it causes or contributes to non-attainment of any applicable state water quality standard. 40 C.F.R. § 230.10(b)(1). Maine classifies the tidal waters of the lower Kennebec River in Phippsburg and the Popham/Small Point Beach areas as Class SA waters. 38 M.R.S.A § 469 (designating tidal waters east of longitude 69°-50'-05" W and west of longitude 69°-47'-00"W as Class SA). The dredging site north of Doubling Point is classified as SB. *Id.*

a. Class SA Violations

The Class SA designation reflects that the waters of the Kennebec Narrows, Kennebec Estuary, and the Popham/Small Point Beach complex are "outstanding natural resources and which should be preserved because of their ecological, social, scenic, economic or recreational importance." 38 M.R.S.A § 465-B(1). The designation prohibits any discharge of pollutants (other than exceptions not relevant here). *Id.* § 465-B(1)(C). Sand, silt, and other material released from dredging and disposal constitute a discharge of pollutants in violation of Class SA standards and, for the reasons explained above, will significantly and adversely impact the waters and the community.

The Popham and Small Point beaches and the highly productive clamflats in the Morse and Sprague River wetland and marshes are designated class SA. Merely because the JKL discharge point is feet inside the line between SA and SB waters (69°-47'-00"W) does not change the fact that dredge spoils are drifting directly into class SA waters in violation of statute and impacting the outstanding natural resources the class SA designation is meant to protect. Accordingly, the proposed dredging at Popham Beach and dumping at JKL cannot be permitted under 40 C.F.R. § 230.10(b)(1).

The Bluff Head disposal site is also designated Class SA, and therefore this site is also ineligible for a fill permit to discharge dredge spoils. According to the Maine Department of Environmental Protection, the state will either ask the Corps to move the disposal site so that it lies entirely within Class SB waters or it will ask the Legislature to downgrade the classification to Class SB. The latter option cannot be done unless the state conducts a Use Attainability Analysis pursuant to 40 C.F.R. § 131.10(g) and 38 M.R.S.A § 464(2-A), and conducts public hearings and public participation consistent with the procedures required by 49 C.F.R. part 25. *See also* 38 M.R.S.A § 464(2). A 401 Certification and 404 permit cannot be based on a water quality classification unless those requirements are met (and they have not been met) and the revision is approved by the U.S. Environmental Protection Agency.

b. Class SB Violations - Clamflats

Nor can disposal in SB waters be permitted if it would cause the Department of Marine Resources (DMR) to close open shellfishing areas. 38 M.R.S.A § 465-B(2)(C). As documented by the Phippsburg Shellfish Committee, past disposal at Bluff Head did not stay in the disposal

area but rather caused significant siltation of clamflats at Drummore Bay, the Upper Flats, Parker Head, Wyman's Bay, and Atkins Bay. Past disposal at JKL has resulted in siltation of clamflats in the Popham/Small Point Beach and Morse/Sprague River complexes. DMR monitors have stated to the Phippsburg Shellfish Committee that siltation of clamflats would trigger mandatory public health reporting protocols and would almost certainly require a complete shutdown of shellfish harvesting for the duration of the dredging and disposal period. As noted above, because each day of new dredging could potentially release toxins, closures would have to remain in effect throughout the project period and potentially for several days and/or weeks afterwards.

DMR's shellfish protocols are based upon the U.S.D.A Food and Drug Administration's National Shellfish Sanitation Program (NSSP) and are required to safeguard public health.

Oysters, clams, mussels and scallops are filter feeders that pump large quantities of water through their bodies when actively feeding. During this process, molluscan shellfish can concentrate microorganisms, toxigenic micro-algae and poisonous or deleterious substances from the water column when they are present in the growing waters. Concentrations in the shellfish may be as much as 100 times that found in the water column. If human pathogens are concentrated to an infective dose, and if the shellfish are consumed raw or partially cooked, human disease can result. If toxigenic micro-algae are present and producing toxin, human illness or death can occur, and cooking is not reliable as an effective barrier against intoxication.³

Accordingly, the NSSP program requires immediate closure of shellfish areas any time discharge of pollutants may endanger public health. Because potential impacts endangering public health from siltation due to dredge spoils disposal cannot be determined in advance, there is clearly a significant chance that the proposed activity would result in closure of currently open shellfishing areas and thereby violate state water quality standards. Thus, the state cannot certify that the proposed activity will comply with water quality standards pursuant to section 401 of the CWA. Without that water quality certification, the Corps cannot issue a Section 404 permit for the proposed activity. 40 C.F.R. § 230.10(b)(1).

In addition, siltation of the clam flats from dredging and dumping during the summer months will bury clam spats sets (juvenile clams) in the above listed clamming areas, potentially disrupting the year class, causing impairment of habitat in violation of 38 M.R.S.A § 465-B(2)(A), and damaging the fishing economy and community.

³ National Shellfish Sanitation Program, *Sanitary Survey and the Classification of Growing Waters National Shellfish Sanitation Program Guide for the Control of Molluscan Shellfish* 2007, Section IV, Guidance Documents, Chapter II. Growing Areas, .03 Sanitary Survey and the Classification of Growing Waters, available at <http://www.fda.gov/Food/FoodSafety/Product-SpecificInformation/Seafood/FederalStatePrograms/NationalShellfishSanitationProgram/UCM053724>.

c. Class SB Violations – Habitat and Aquatic Life

The Kennebec Narrows disposal site north of Bluff Head is a rocky deep, narrow (300 yards) channel with strong currents, eddies and upwelling. It is a critical and very biologically rich area: all the aquatic life that rides the currents up and down the Kennebec transits these narrows. Since it is a fertile fishing ground, it attracts diving ducks, birds, birds of prey and seals. Impacts to this rich aquatic environment have not been studied; nor are there any analyses of impacts to this river segment in the draft EA or Public Notice document.

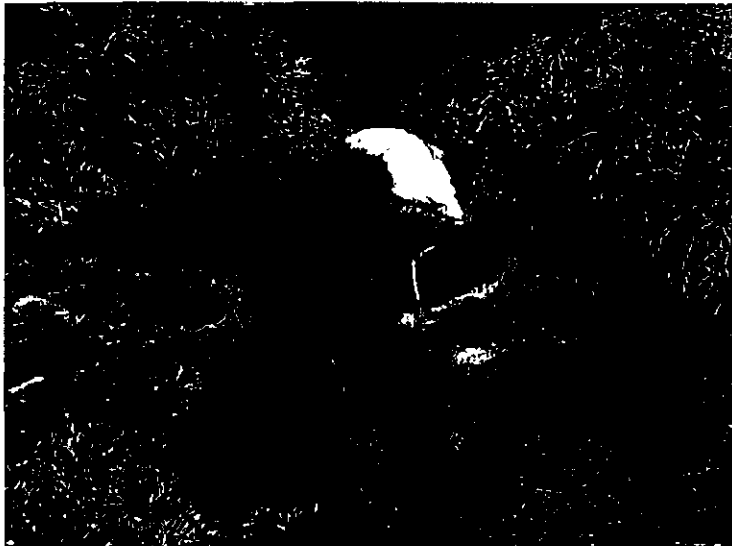


Figure 3: A thick layer of mud and muck still coats the western shore of the Kennebec Narrows approximately 17 months after being deposited from the dumping of dredge spoils in 2009

During a prior dredging event in November 2009 – which involved disposal of 18,750 cubic yards of material designated as “clean sand” – dumping resulted in immediate and extreme turbidity and discoloration of the entire reach of the Kennebec Narrows, and drove virtually all wildlife from the area. Despite being labeled as clean sand in the state and federal permits, a foot-plus thick layer of mud, muck and silt was deposited on the shoreline and adjacent marshes. This impact is not temporary. As shown in the photograph in Figure 3, approximately four to six inches of mud and muck still covers most of the intertidal zone over a year later.

This artificial layer of muck extends throughout much if not all of the Kennebec Narrows and adjacent marshes and wetlands, including the marsh at the Phippsburg Land Trust’s Greenleaf Preserve. (This is also an example of the kind of deposition that threatens clamflats, see above).

Maine’s Class SA water quality standards require “free flowing and natural” habitat, 38 M.R.S.A § 465-B(1)(A), and SB requires “unimpaired” habitat. 38 M.R.S.A § 465-B(2)(A). Further, “[d]ischarges to Class SB waters may not cause adverse impact to estuarine and marine life in that the receiving waters must be of sufficient quality to support all estuarine and marine species indigenous to the receiving water without detrimental changes in the resident biological community.” *Id.* at § 465-B(2)(C). Deposition of over a foot of mud and muck along the Kennebec Narrows intertidal zone and wetlands is a categorical violation of both SA and SB standards, impairs habitat and adversely affects aquatic life. As such, the dredging proposal cannot be permitted. 40 C.F.R. § 230.10(b)(1); *see also id.* § 230.32-43 (requiring evaluation of impacts to wildlife, sanctuaries and refuges, wetlands, mud flats and vegetated shallows in order to determine compliance with the Section 404(b)(1) Guidelines).

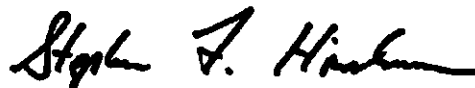
VI. ESA and Marine Mammals

The project area is Essential Fish Habitat for a number of migratory and resident fish species including shortnose sturgeon and Atlantic salmon, both of which are listed under the Endangered Species Act. The lower Kennebec River also contains an active seal population most common of which are harbor seals, which are protected under the Marine Mammal Protection Act. All of these species are most active in the river in summer and are at highest risk of harassment or harm from dredging activities. Previous dredging in winter resulted in incidental take of shortnose sturgeon; if anything loses of those species – if permitted by NMFS – will likely be even greater at this time of year due to both dredging and disposal activities.

VII. Conclusion

For the above reasons, the 404 permit for August dredging should be denied.

Sincerely,

A handwritten signature in black ink, reading "Stephen F. Hinchman". The signature is written in a cursive, flowing style.

Stephen F. Hinchman, Esq., for the Phippsburg
Commenters

Cc: Mary Colligan, NMFS
Bob Green, MDEP
Steve Silva, EPA
Wende Mahaney, USFWS
Jay Clement, USACE
Town of Phippsburg

March 29, 2011

Robert L. Green, Jr., Project Manager
Division of Land Resource Regulation, Bureau of Land and Water Quality
Maine Department of Environmental Protection
312 Canco Road, Portland, Maine 04103
Robert.Green@maine.gov



COMMENTS SUBMITTED VIA E-MAIL

RE: Public Comments to the U.S. Army Corps of Engineers permit submission: Proposed August 2011 Maintenance Dredging of the Kennebec River Channel, Sagadahoc County, Maine

Dear Mr. Green,

The Kennebec Estuary Land Trust (KELT) is a membership based conservation organization representing the towns of Bath, West Bath, Woolwich, Arrowsic, Georgetown and Westport Island. We have over 300 members supporting our mission to conserve the natural, historic, scenic, cultural and agricultural resources of the Kennebec Estuary. They trust us to safeguard this significant natural resource and while we have never taken an advocacy role, this issue seemed so significant we felt obliged to comment.

The Kennebec River Estuary is significant to the entire state of Maine:

- The Kennebec River system drains nearly 40% of Maine.
- The Kennebec Estuary contains over 500 miles of coastline and river frontage.
- It is comparable to the Hudson and Chesapeake Bay estuaries for its historic abundance.
- 20% of Maine's tidal marshes are found within the estuary, representing the largest concentration of salt marshes in the state.
- Five federally endangered and threatened species inhabit the estuary.

KELT feels that dredging a section of the Kennebec Estuary in August will adversely impact the resources that we are dedicated to protecting.

KELT has reviewed dredging impacts in the lower river and participated in depth testing of the disposal area in the summer of 2010. These results led us to believe that the spoils had washed away from the disposal site and had wider impact than anticipated.

We are particularly concerned with disturbance to the endangered Shortnose Sturgeon and Atlantic Sturgeon, noting that five takes occurred the last time an August dredge was performed (2003), and the shellfish flats of Arrowsic, Georgetown and Phippsburg will become silted and experience decreased production or complete closure.

Mailing: P.O. Box 1128 - Physical: 92 Front Street - Bath Maine 04530 (207) 442-8400

WWW.KENNEBECESTUARY.ORG



As our DEP funded AmeriCorps volunteer is finding in her term with our organization, water quality has enormous impact on the regional shellfish industry.

We encourage alternate solutions to dredging in August such as use of a local pilot who knows the channels, or rescheduled launch to avoid a need to dredge at this environmentally sensitive time of year.

In addition, we strongly encourage:

1. A full Environmental Impact Statement especially impacts to aquatic life.
2. Adherence to the Clean Water Act (CWA) and the Maine Natural Resources Protection Act (NRPA) requiring that water quality standards not be violated when dredging is performed
3. If deemed absolutely necessary, the dredging should be done using best practices to reduce turbidity, siltation and re-deposition of materials.
4. Alternate disposal methods: Dispose of the material upland in locations that would benefit from the material.
5. Avoid over-dredging: Doubling Point and Popham Beach are active areas that re-shoal rapidly, the data doesn't show it extends the overall time between dredges.
6. Improve the Environmental Assessment by the ACE to include the BIW dredging and disposal information, because that is part of the cumulative impacts.

Thank you for the opportunity to make comments.

Sincerely,

A handwritten signature in cursive script that reads "Carrie Kinne".

Carrie Kinne
Executive Director

A handwritten signature in cursive script that reads "Jack W. Witham".

Jack Witham
President

cc: William Kavanaugh, Jr
U.S.Army corps of Engineers mae-pn-nav@usace.army.mil

Mailing: P.O. Box 1128 - Physical: 92 Front Street - Bath Maine 04530 (207) 442-8400

March 29, 2011

Comments via E-mail

Robert L. Green, Jr., Project Manager
Division of Land Resource Regulation, Bureau of Land and Water Quality
Maine Department of Environmental Protection
312 Canco Road, Portland, Maine 04103
Robert.Green@maine.gov

Cc: William M. Kavanaugh, Jr
nae-pn-nav@usace.army.mil

RE: US Army Corps of Engineers permit application for Dredging the Kennebec River, with disposal specifically at Jack Knife Ledge, Phippsburg, ME.

Dear Mr. Green:

I am writing to comment on the dredging and disposal activities proposed by the US Army Corps of Engineers for the Kennebec River in August, 2011.

I live in Phippsburg, on the Sprague River, just off of Seawall Beach. The proposed disposal of dredged materials at Jack Knife Ledge is likely to affect water quality in the vicinity and impose aesthetic and recreational impacts on both Seawall and Popham beaches. I am also concerned with regard to increased fecal coliform levels and chemical impacts of such disposal. In August, literally thousands of beach-goers are swimming every day in waters that, in historical memory, have not caused any known illness or contamination. As an avid swimmer and surf kayaker, I am in the water nearly every day in August; should disposal occur, I will document any abnormalities.

But my concerns about discharges into waters at a location approximately 1.5 nautical miles from Seawall Beach are more than personal. I am also the Director of the Bates-Morse Mountain Conservation Area (BMMCA). Some 16,000 visitors to BMMCA recreate on Seawall Beach each summer. The trail head at the beach is directly inshore of Jack Knife Ledge, and most visitors congregate and swim in that area of the beach. As Director, I have responsibility for the public's health and welfare while visiting BMMCA. Shall I tell thousands of visitors to stay out of historically clean waters for the month of August? And what about the health and welfare of visitors to Popham Beach State park—the most popular park in the entire state?

I also actively support local economy. For Phippsburg, that means shellfish, lobster and tourism. These industries will be adversely affected by the proposed activities. It is common knowledge that all of the boats leaving Small Point Harbor fish off Jack Knife Ledge in the summer, and particularly in August, at the peak of the season. I have heard from lobstermen that dredged sediments will “bury lobsters.”

There is widespread concern in Phippsburg that disposal at Jack Knife Ledge will also impact an exceptionally productive clam flat at the mouth of the Morse River. August is the worst time for such impacts, both in terms of the summer market for clams but also with respect to the long term

viability of the Morse River clam flat. It is believed that juvenile clams will be significantly compromised by sediments.

Even a cursory review of the relevant statutes reveals that a discharge into the lower Kennebec and coastal waters at Jack Knife Ledge is illegal under these circumstances. Under Section 301(a) of the Clean Water Act, the Maine DEP must certify that the Army Corps of Engineers has complied with Section 404 before granting Water Quality Certification. Has the DEP Administrator determined that the discharge of dredged materials will not have an adverse effect on shellfish beds and fishery areas, or on wildlife or recreational areas? If so, has the Administrator "set forth in writing" and made "public his findings and reasons for making any determination..." (FWPCA Section 404 (c).) If such findings are based on the (flawed) 1997 Normandeau study, the Administrator should know that the public is not satisfied with such "findings." Has there been monitoring of impacts to biota, sediment transfer and water quality for weeks—or even months—before and after dredging and discharge? Under FWPCA Section 403 (c)(2), "...no permit shall be issued" where "insufficient information exists on any proposed discharge..." If, on the other hand, findings are more substantive than those produced by the Normandeau study, as the Director of a publicly used swimming area, I would much appreciate documentation prior to any discharges during the summer season.

Furthermore, the waters we are discussing are classified as SA, requiring, under both federal and state law, a strict policy of anti-degradation with respect to marine life and all existing uses. Can this be shown? Even in the event of an SB classification, designated uses shall be maintained, including shellfish harvesting, fishing and recreation. Again, can this be demonstrated with written findings made available to the public?

In sum, I cannot fathom an essentially illegal decision to compromise natural resources, local industries, recreational and aesthetic values, and potentially the public health and welfare—and at a cost of over \$1 million dollars to taxpayers—in order to remove potential sand crests from the Kennebec River, particularly given that the Spruance has previously navigated in and out of the Kennebec on several occasions.

I trust that the Administrator will take the public outcry into consideration and will fairly identify alternatives.

Thank you for the opportunity to comment.

Sincerely,

Laura Sewall, PhD
Director, Bates-Morse Mountain Conservation Area
Assistant Director, The Harvard Center for Community Partnerships
Bates College
161-163 Wood Street
Lewiston, ME 04240



TOWN OF PHIPPSBURG

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Phippsburg, Maine 04562

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Comments via Email

March 25, 2011

Robert L. Green, Jr.,
Project Manager Division of Land Resource Regulation,
Bureau of Land and Water Quality
Maine Department of Environmental Protection
312 Canco Road, Portland, Maine 04103

Re: Maintenance and Advance Maintenance Dredging of the Federal Navigation
Project in the Kennebec River, Maine.

Dear Mr. Green,

The Phippsburg Shellfish Committee represents 40 local commercial shellfish harvesters who depend upon the shellfish flats in Phippsburg, Maine for a substantial portion of our families' financial support. We feel the proposal to dredge the Kennebec River in August, 2011 will have a significant negative economic and environmental impact on Phippsburg's shellfish harvest, and should not be approved.

Impact of Dredging on Shellfish Flats:

Modern commercial harvesting of shellfish in Phippsburg began a quarter century ago, when the clean up of the Kennebec River under state and federal cleanup laws had progressed to the point where previously closed flats on the river were reopened to harvesting. The town of Phippsburg actively manages our shellfish flats, performing water quality testing, population surveys and reseedings in order to ensure this resource continues.

We have had experience with numerous dredging events over the years – most recently, in 1997, 2000, 2002 and 2003, when the areas proposed for dredging and disposal in this application have been affected. In our experience, dredged matter does not stay within the proposed dumping area and/or the dredging process itself releases noticeable and significant silt spreads throughout the clam flat areas along the Kennebec, particularly those in proximity to the dredging or dump sites, closing the feeding and breathing holes used by harvesters to locate populations of clams. Dredging at Doubling Point and dumping at Bluff Head affects active shellfish flats at Dromore Bay, the Upper Flats, Parker Head, Wyman's Bay and Atkins Bay. Dredging at Popham Beach and disposal at

Jackknife Ledge affects the entire Small Point/Popham Beach complex, including the Morse and Sprague rivers.

The Army Corps of Engineers Public Notice acknowledges that it is part of the Corps' management of the environmental impacts of dredging to dispose of the dredged material within the littoral system so that it is recycled. In our experience, the removal and deposit of the sand and silt through dredging results in immediate impacts on shellfish resources throughout the affected areas.

- Dredging in August will cause significant economic impact on 40 shellfish harvesters and their families. It will cause additional negative impact to the sustainability of the shellfishing industry in Phippsburg by reducing sales of recreational shell fishing permits, a key source of funding for the Phippsburg shellfish program.

The months of July and August are the best months for shellfish harvesting – the weather tends to be dry and the value of each bushel of clams is at its peak. We earn as much as ½ of our annual income during these two months. Moreover, Phippsburg has a substantial summer population, many of whom traditionally obtain a recreational shellfish harvesting permit.

The Department of Marine Resources, which manages the State of Maine's Shellfish Management Program and monitors water quality at the Kennebec River shellfish flats, states that dredging activity is a trigger for review of the status of shellfish harvesting on the River. They indicate dredging and disposal on the Kennebec River and in the near off-shore area off Popham will almost certainly require a complete shutdown of this area to shellfish harvesting during the dredging period. It is unknown how much additional closure time will be required in order for sediment to settle and the area to recover.

It cannot be overemphasized what a devastating loss this will be to the 40 families who depend on this resource. In August of 2010, shellfish prices were about \$120/bushel, and at times reached as high as \$140-\$150/bushel. In recent years, the Kennebec River flats have been subject to a number of closures due to high rainfall and excessive upstream pollution; we have lost as many as ½ of our fishing days each year. Moreover, if there is red tide closure elsewhere on the coast, which is not uncommon in late summer, the Kennebec River flats are often the only local areas that remain open.

August stands as one of the most valuable months for shellfish harvesting; our families depend on the income we receive during August to sustain us when the flats are closed in other times of the year. Phippsburg harvesters could easily lose \$350,000 to \$500,000 of income if the flats are closed for the month of August, not including the costs to the Phippsburg shellfish management program from the loss of recreational permit sales. Shellfish harvesters from Georgetown and Arrowsic would be equally affected.

Even if it were possible to keep the shellfish flats open during the dredging, we know from past experience that when dredging occurs, silt and sand settle on the flats, closing the holes and making it difficult to find clams. This would also reduce our income during

a key period – we estimate productivity is diminished by 1/3 to 1/2 when there is excessive silt and debris in the waters and on the flats. Being unable to find clams will also discourage recreational clam harvesting, reducing the permit sales that support the Phippsburg shellfish management program.

- Dredging in August will harm the clam population. Excessive siltation can suffocate adult clams, and will certainly cause stress, reducing growth. Moreover, dredging in summer is potentially devastating to the juvenile clam population, which must “set” near the top of the flats until they mature enough to survive at deeper levels. Being buried by a layer of silt or an influx of other dredged material will kill many of these juvenile clams.

The Jackknife Ledge disposal site sits offshore from the Fox Islands and the mouth of Morse River. It is part of the sediment circulation system that feeds the entire Small Point and Popham beach area. As noted above, this is apparently part of the reason why the Corps has selected the Jackknife Ledge site, as the area is considered part of the littoral system. This is also why we are especially concerned about dredging and dumping -- both in this area and at this particular time of year.

In the last few years, the Morse River has become one of the most productive clam spawning grounds in Phippsburg. It is one of the few places where sufficient seed clams for our reseeded efforts could be found in 2010. In August, any spring-spawned clams that have survived will be in the top inch or so of these flats; these juveniles are especially susceptible to stress and suffocation if buried under silt or dredging debris, or if they are in waters with a high amount of suspended solids.

There are known spat sets (juvenile clams) at Wyman’s Bay, Parker Head Mill Pond, and elsewhere on the Kennebec River. These juveniles will also be at risk if dredging occurs in August at the Doubling Point/Bluff Head sites. The risk to the juvenile clam population means that the impact of dredging in August goes far beyond the current economic costs to today’s harvesters; such activity will impact the sustainability of our shellfish program for years to come.

- Other Phippsburg fisheries will be adversely affected by the proposed dredging timetable. There is extensive lobstering at the mouth of the Kennebec. Sports fisherman and the river guides who serve them use the lower Kennebec extensively for fishing. August is a peak season for both of these activities, which are crucial to the economic vitality of this region and the State of Maine.

Like most Maine fisherman, many of the Phippsburg shellfish harvesters are or have been involved with other fisheries as well. We note that the mouth of the Kennebec has a significant amount of lobstering activity (particularly south of Jackknife Ledge). One committee member noted you could practically walk from Morse River to Seguin Island on the sea of lobster buoys in the area in August. We are concerned that dredge itself will cut lines and wipe out lobster traps that are in its path, both while dredging and while transporting the dredged material to the disposal site. The dredging and dumping at the

mouth of the Kennebec will kill and stress lobsters present in this very active fishery, again at a time of year when demand for the product is at its peak.

Many local people work in support of recreational/sports fishing, as fishing guides and as suppliers of bait and equipment. The dredging activity proposed will be disruptive at a minimum and could potentially be devastating to this economic activity. Moreover, many of the smaller fish that the sports fish such as bass prey upon are known to use this section of the river, such as shad, herring, smelt, and alewives. Sturgeon, both Atlantic and the endangered shortnose, are also found in this section of the Kennebec. This area is truly the Essential Fish Habitat defined in federal regulations protecting these waters.

- In August of 2011, dredging should be a last resort in these critical waters.

The SPRUANCE has recently navigated the Kennebec River channel (winter 2011) as part of its outfitting and testing. It seems reasonable to believe the Navy should be able to navigate the channel in September of 2011 without dredging, particularly when the potential negative impacts are so significant. If dredging is required, it should have been reasonably anticipated ahead of time and performed during the designated November to April timeframe, and not permitted at a time of year when there are such significant negative environmental and economic consequences.

Past dredging has had minimal effects on shellfish harvesting because it has occurred in winter or early spring, before clams have spawned. Moreover, in November and in late winter, the Kennebec River is already running high, which allows the sediment and debris stirred up by the dredging and dumping to be quickly cleared by the river's flow. Indeed, the best possible time to dredge would be when the river is already closed for shellfish harvesting due to rainfall or high water flow, because the economic impact of a forced closure would be lessened, and because the action of the river will quickly remediate much of the impacts of dredging, by clearing the water column and by scouring sediment from the clam flats. The worst possible time to dredge the Kennebec River is late summer, when the river's flow is at its lowest level, and when shellfishing and other fisheries are at their peak.

If the Navy's poor planning now requires an emergency action, all other alternatives should be considered before dredging and dumping in the local waters is employed. Moreover, any dredging should be limited to the minimum amount needed for the SPRUANCE's passage, in order to limit the negative environmental effects on the shellfish and other species of the Kennebec River and the Popham area, and the devastating economic impacts on shellfish harvesters and other fisheries in Phippsburg.

Thank you for your consideration,

Sincerely,



Dean Doyle, Chair
For the Phippsburg Shellfish Committee

cc: William M Kavanaugh, Jr
U.S. Army Corps of Engineers
New England District
696 Virginia Road
Concord, MA 01742-2751
nae-pn-nav@usace.army.mil

Steve Hinchman, Esq.

Dot Kelly

March 20, 2011

COMMENTS SUBMITTED VIA E-MAIL

Robert L. Green, Jr., Project Manager
Division of Land Resource Regulation, Bureau of Land and Water Quality
Maine Department of Environmental Protection
312 Canco Road, Portland, Maine 04103
Robert.Green@maine.gov

RE: Public Comments to the U. S. Army Corps of Engineers (USACE) permit / certification submission: Proposed August 2011 Maintenance Dredging of the Kennebec River Channel, Sagadahoc County, Maine

Thank you for providing this opportunity to comment.¹ USACE is proposing to dredge 50,000 cubic yards of sediment from the navigation channel in Doubling Point reach because the tops of some of the sediment waves which are sculpted by the currents may interfere with the Spruance's departure from BIW in September 2011. USACE is proposing to dispose of these dredge spoils in the Bluff Head disposal site in the Kennebec River two miles downstream.

Besides the comments below, these comments also incorporate by reference the comments submitted on March 21, 2011 by FOMB of which I am a member.

Highlights:

1. Maine DEP permits and certifies both the dredging activity at Doubling Point in Bath as well as the in-river disposal activity at Bluff Head in Phippsburg. Historically, the in-river disposal portion of the activity has been hidden within the dredging application and gotten a disproportionately cursory review.
2. Neither a NRPA permit, nor a water quality certification should be given prior to the applicant providing a thorough evaluation of the disposal site and a demonstration that the disposal site is approved according to the legal requirements. Given the quantity of dredge spoils and the valuable fish/ bird/seal habitat at this narrow, fast part of the Kennebec Estuary, it defies reason to allow the dumping since there are less costly, environmentally sound alternatives.
3. USACE has avoided evaluating the impacts of the in-river disposal at Bluff Head, as required to comply with 40 CFR 230. Somehow the Bluff Head disposal area was being viewed as not needing to comply with the "in-water dredging disposal site" regulations. This disregard of the regulatory requirements is improper and has been detrimental to the resource and should not be allowed to occur again.
4. The 10 year NRPA permit / Water Quality Certification Approval (#L-16281-4E-D-N), signed in March 2002, based its evaluation of the impact on Bluff Head on flawed, scanty information, discussed below. This same study is being cited again as

¹ Not being sure if the Maine DEP 30 day public comment period for the Water Quality Certification ends today, these comments are being submitted in order to provide important input and preserve standing as the process continues.

justification. The statement in the summary, *"based on past water quality monitoring by the applicant during the disposal of material at Bluff Head, the Department does not anticipate that the proposed dredging or disposal of material will degrade water quality in the Kennebec River"* is just wishful thinking, and a real evaluation, such as required by 40 CFR 230, needs to be done.

5. Alternatives to the proposed dump site have not been evaluated according the legal requirement that a practicable alternative that has less environmental impact must be chosen. Viable, less environmentally damaging and less costly alternatives are suggested.
6. These comments request intervenor status, and interested person status, as applicable, on all actions and negotiations related to this 2011 Kennebec River dredging and disposal proposal.

A. What do the Natural Resource Protection Act and the Water Quality Certification require?

Natural Resources Protection Act (NRPA). The NRPA requires that dredging and in-river disposal not be performed until the applicant demonstrates that the action does not unreasonably interfere with existing aesthetic, recreational or navigational uses, and demonstrates that the proposed activity meets the standards.

The Natural Resources Protection Act (38 §480-A) declares that the State's rivers and streams, . . . and coastal wetlands and coastal sand dunes are resources of state significance.

. . . further finds and declares that there is a need to facilitate research, develop management programs and establish sound environmental standards that will prevent the degradation of and encourage the enhancement of these resources.

. . . further finds and declares that the cumulative effect of frequent minor alterations and occasional major alterations of these resources poses a substantial threat to the environment and economy of the State and the quality of life.

Prohibitions. (38 §480-C). A person may not perform or cause to be performed [dredging or filling] without first obtaining a permit from the department if the activity is located in, on or over any protected natural resource.

The permit will be granted when the Department finds that the applicant has demonstrated that the proposed activity meets the standards in subsection 1 to 9.

- **Existing uses.** The action will not unreasonably interfere with existing scenic, aesthetic, recreational or navigational uses. Thus, the demonstration must analyze the impact of dumping 135 million pounds of material into the river in August, including about 1 million pounds of fine silt and clay.
- **Harm to habitats; fisheries.** The demonstration must analyze the significant wildlife habitat in the area, and demonstrate there will be no unreasonable harm. The 2009 dumping clearly affected the seals which had been in the area and the muck being deposited in the intertidal zone appears to inhibit life. Just as the area is recovering

(because much of the muck is being dispersed) another disposal action is being proposed.

- **Lower water quality.** Since the area is a Class SA area, and an NRPA permit should not be given to any activity that violates water quality law, one would think the likelihood for getting a permit for this activity would be slim to none. The Class SA standard states: There may be no direct discharge of pollutants to Class SA waters except for compliant storm water discharges and permitted aquatic pesticides to control mosquito borne diseases. The CWA definition of pollutant includes dredged spoils. (40 CFR 230.3(c)).

A more thorough evaluation of the projects' plan to dispose of dredge spoils at Bluff Head throughout the month of August is required. Will it unreasonably interfere with existing scenic, aesthetic, recreational and navigational uses? Will there be unreasonable harm to the aquatic environment and species? Will it lower water quality? Yes to all three, is the answer that seems most likely. Thus, no NRPA permit should be issued for this proposed application.

Water Quality Certification. The applicant is required to obtain a water quality certification for any activity that may result in a discharge to the navigable waterways of the State. The Maine DEP must certify that any such discharge will comply with the applicable provisions of Section 301, 302, 303, 306 and 307. For the 2011 dredging and disposal in the lower Kennebec, compliance with Section 301(a) needs to be confirmed prior to issuing a water quality certification.

Section 301(a) of the Clean Water Act states:

SEC. 301(a) Except as in compliance with this section and sections 302, 306, 307, 318, 402, and 404 of this Act, the discharge of any pollutant by any person shall be unlawful.

Thus, Section 301(a) requires that the Maine DEP certify that the Army Corps of Engineers has complied with the requirements of section 404 (as it relates to dredging disposal), otherwise the discharge of any pollutant by any person shall be unlawful. Since MEDEP must certify that the discharge complies with Section 301, MEDEP must assure that the Corps approval of the Bluff Head disposal site is done in compliance with 40 CFR 230.

Section 404 provides that the Secretary of the Army, acting through the Chief of Engineers, issues permits for the discharge of dredged or fill material. In order to dispose of dredge spoils in a navigable water, the disposal site needs to comply with the provisions of 40 CFR 230. Although 40 CFR 230 has a thorough description of the findings that need to be made in order to utilize a disposal area, previous permits for disposal at Bluff Head have not been required to show compliance with 40 CFR 230.

In regards to in-river dredging disposal, the Army Corps of Engineers might be compared to a fox watching the henhouse – the ACE is the applicant for the permit, the ACE is also the permit granting authority, and if the permit is violated, the ACE is the enforcement agency!

However, the Water Quality Certification requires that Maine DEP also be watching the hen house. By having Maine DEP determine that the Army Corps of Engineers has complied with Section 404, in granting an in-river dredging disposal approval, an important check has been added to the dredging disposal site permitting process. This comment requests that the Maine

DEP do a full review of the 40 CFR 230 requirements for approval of an in-river disposal site, and make a finding of fact regarding the ACE permit application documentation compliance with 40 CFR 230 requirements.

After making a finding of fact that the ACE is in compliance with the disposal site approval requirements, then Maine DEP will be able to issue a water quality certification, but not before.

B. 1997 Normandeau Letter, the basis of the 2002 water quality certification and prominently mentioned in the 2011 draft Environmental Assessment to justify the issuance of a water quality certification is fatally flawed on many levels, from study design, to the level of "report" detail and sloppy editing, to questionable conclusions.

In March 2002 The Maine DEP issued a water quality certification for dredging of the Doubling Point reach and disposal of the dredge spoils at Bluff Head. However, the findings of fact only provided this statement,

Based on past water quality monitoring by the applicant during the disposal of material at Bluff Head, the Department does not anticipate that the proposed dredging or disposal of material will degrade water quality in the Kennebec River.

In the draft 2011 Environmental Assessment, on page 18, the ACE discusses the 1997 Normandeau study.

A water quality monitoring study was conducted to meet the Water Quality Certification (WQC) conditions for the 1997 dredging and disposal activities at Doubling Point. The WQC conditions specified that bacterial levels be monitored just south of the Bluff Head disposal site immediately before and soon after disposal episodes, and that turbidity be monitored before and after disposal events at Bluff Head. The monitoring was conducted by Normandeau Associates and concluded that the "turbidity levels near Bluff Head dredging and disposal areas in the Kennebec River were low, before, during and after the November 1997 dredging. There was no apparent trend related to station, depth, or dredging/disposal. Fecal coliform levels were low with one exception, possibly related to the pre-dredge storm activity, which may affect runoff or WWTP function. There was no evidence of an increase related to dredging.

Relying on the December 5, 1997, Normandeau Associates monitoring letter (3 pages with 8 pages of attachments) as a demonstration that the disposal area was approved for use when only one sample location (with two samples mid-depth and bottom-depth) were taken a half mile upstream of the disposal area and a similar, one sample location tested at mid-depth and bottom-depth, was taken hundreds of yards downstream of the disposal area and analyzed for turbidity, suspended solids and fecal coliform, is disgraceful. One clue that the study was biased to report results that didn't show an impact, is that the upper portion of the waterway was not sampled (or perhaps just not reported).

Three different days were sampled. Friday November 14 (a day of a "large storm") was used as a baseline, pre-dredge sample. How ridiculous. Obviously a large storm is going to have a noticeable impact on turbidity and possibly on fecal coliform, as storm water and combined

sewers cause large discharges. An important study to certify water quality should have a study plan which assures that the baseline data gathering effort is typical of baseline.

The only description of the work discusses dredging at Bluff Head, which is obviously wrong, and discusses the work at Bluff Head as being initiated on November 23rd, with the "dredging" samples being taken on November 24, and the "post-dredging" samples being taken on November 25th and November 18th. It's not clear there is any useful data here, but what is clear is that the impact was measured, at best, after only one day of dredge disposal and from pretty far away.

Normandeau collected three sets of samples. The first was collected on Friday, November 14th, prior to reported initiation of dredging at Bluff Head on November 23rd. The second set of samples was collected on November 24th, during the dredging operation. The third set of samples was collected on November 18th on the outgoing tide and November 25th on the incoming tide. [Note: no other part of the report addresses what the tidal direction was during the sampling, which in a high current area is important, and the November 18th date seems suspect].

A review of the data shows that for the station a few hundred yards south of the disposal area, the turbidity value was lowest at pre-dredge, almost doubled on the day of the dredging, and rose a bit higher on the post-dredge. This trend of increasing turbidity in both the mid and bottom sampling may be indicative of a trend that could be a significant impact.

The suspended solids data was generally highest on the day of the storm. Surprising was that the mid-level on the day of the dredging was the second highest value and only slightly less than the highest value on the storm day (53.4 mg/l and 54.0 mg/l) both of which were from the monitoring station to the south of the disposal area. The conclusion here may be that on the one day of dredge disposal the mid depth will be as turbid as a day with a large storm. In the context of the proposed disposal for the whole month of August (which will have cumulative effects from day after day of dredge disposal, one might conclude that the data suggests the impact could be significant. Thus this data set might suggest that more work should be done before additional dredging disposal is undertaken.

For fecal coliform, the bottom sample south of Doubling Point during the pre-dredge storm showed a comparatively high value – 240 MPN/ml. The next highest value was post dredging at the monitoring station a half mile north of the disposal site. Perhaps also noteworthy is that the fecal coliform levels increased dramatically at the disposal site. On the day of the dredge, the mid-depth reading at the monitoring station to the north had a reading of 43, while the deep depth reading was a mere 3.6. By the next day (post-dredge) both the mid-depth and the deep-depth had risen to 93. At the monitoring station to the south on the day of the dredge, both the mid-depth and the deep-depth were low, <3 and 3.6 MPN/ml respectively. On the day of the post-dredge sampling both the mid-depth and the deep-depth were at a fecal coliform level of 23 MPN/ml. Thus interpreting this data set might suggest that additional bacterial concentration work should be done on the dredge spoils and on modeling to see if the rise in fecal coliform over the day of dredge disposal is a predictable result and whether the elevated levels will continue to rise if disposal happens day after day, throughout the month of August. Since bacteria may grow better in warm water, this additional variable should be analyzed.

If the above analysis of the Normandeau study is correct, it is indicative of a problem with scientific method and impartiality, and then insufficient scrutiny off the underlying work by technical persons using the study for future purposes.

C. How does two days of dredge disposal area sampling for turbidity and fecal coliform compare to the 40 CFR 230 data requirements needed to approve an in-river dredge disposal site.

The Factual determinations (40 CFR 230.11) describe the specific short-term and long-term effects on the physical, chemical and biological characteristics of the aquatic environment in the area of the proposed in-river dredge disposal site and this determination must be in writing.

It's too detailed to review the different areas of investigation that must be undertaken, but here is what's required related to the physical substrate.

230.11(a) Physical substrate determination. Determine the nature and degree of effect that the proposed discharge will have, individually and cumulatively, on the characteristics of the substrate at the proposed disposal site. Consideration shall be given to the similarity in particle size, shape and degree of compaction of the material proposed for discharge and the material constituting the substrate at the disposal site and any potential changes in substrate elevation and bottom contours, including changes outside the of the disposal site which may occur as a result of erosion, slumpage, or other movement of the discharged material.

Additionally, the duration and physical extent of substrate changes shall also be considered. The possible loss of environmental values (230.20) and actions to minimize impact (subpart H) shall also be considered in making these determinations. Potential changes in substrate elevation and bottom contours shall be predicted on the basis of the proposed method, volume, location, and rate of discharge, as well as on the individual and combined effects of current patterns, water circulation, wind and wave action, and other physical factors that may affect the movement of the discharged material. The duration and physical extent of substrate changes shall also be considered. The possible loss of environmental values (§230.20) and actions to minimize impact (subpart H) shall also be considered in making these determinations. Potential changes in substrate elevation and bottom contours shall be predicted on the basis of the proposed method, volume, location, and rate of discharge, as well as on the individual and combined effects of current patterns, water circulation, wind and wave action, and other physical factors that may affect the movement of the discharged material.

Because the work to approve an in-river disposal area is involved and it is expensive to do testing in a very fast, very deep stretch of water, most in-river dredge disposal areas are no longer in use. Instead regional ocean disposal sites are typically used if the dredged material is going to be dumped in the aquatic environment.

D. The project area, Doubling Point dredging area and the Bluff Head disposal area

Figure 1 is a Google Earth satellite view of the subject area. The most northerly yellow pin shows the location of BIW. The two yellow pins at the south end of Long Reach, just before Doubling Point mark the approximate northerly and southerly boundaries of the seabed

waveform crest that may require re-forming or removal. Dredging is throughout the 500 foot navigation channel as needed. The next yellow pin, downriver, is to identify Morse Cove and then two yellow pins mark the limited amount of 95-100 foot water in the Bluff Head disposal area. All permits for disposal at Bluff Head reference placement in about 95-100 feet of water, or some similar deep sounding disposal.

Figure 1: Google image of the Doubling Point dredging area and the "Bluff Head" disposal area.

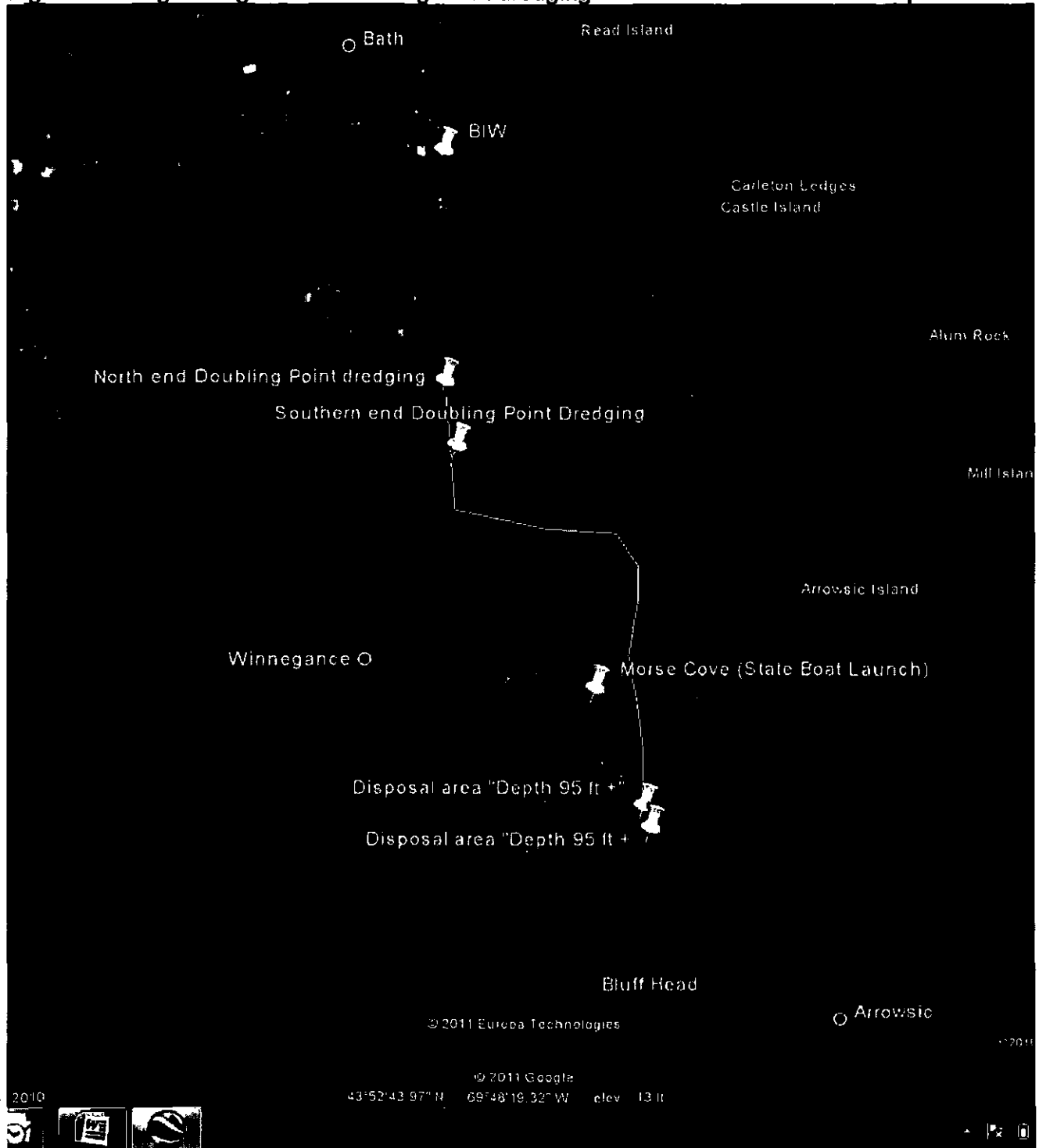
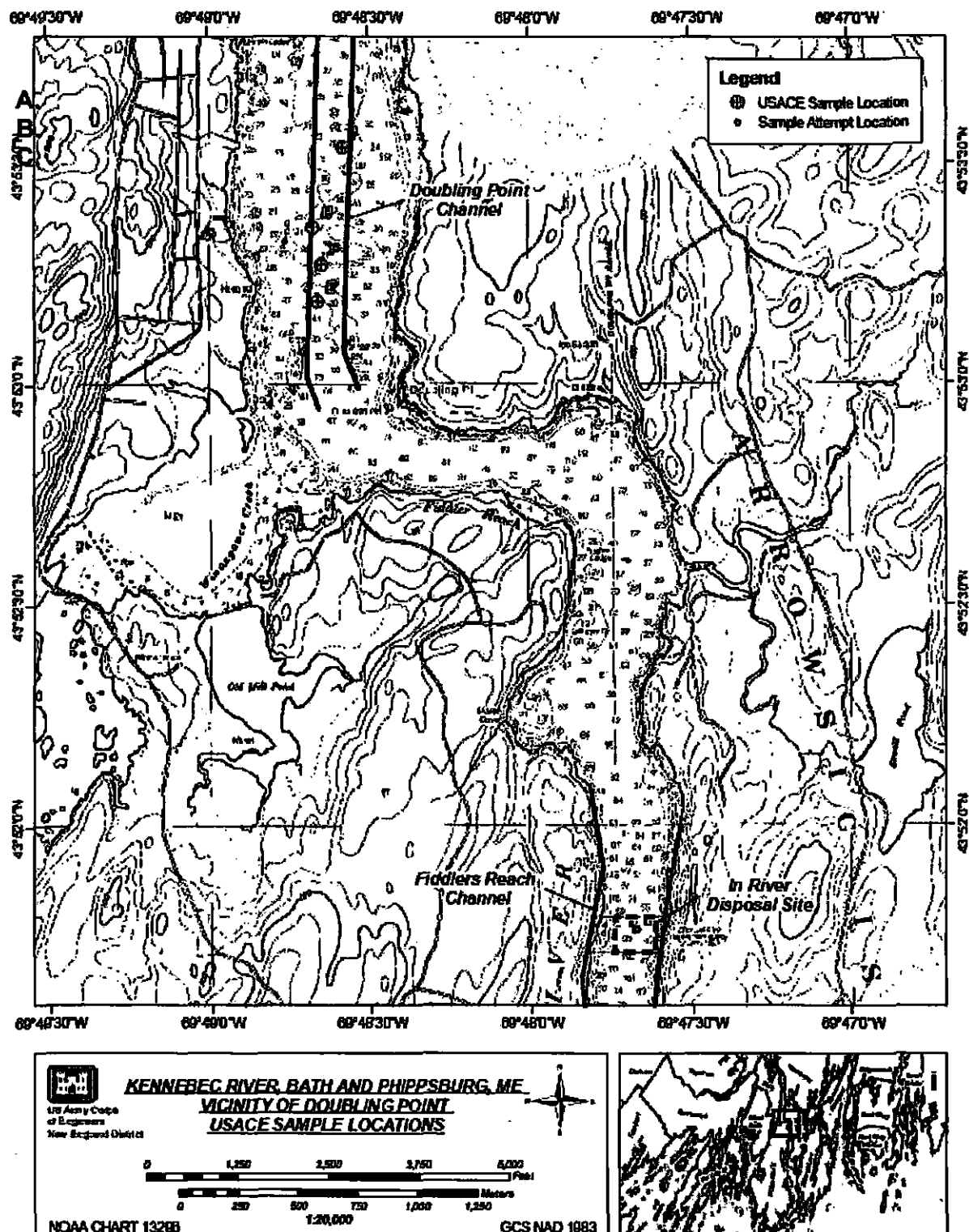


Figure 2: Graphic from the ACE Application that shows a sketch of marking where four dredge material samples were taken from, and where one sample at the Bluff Head disposal area was attempted, but was unsuccessful.



E. Bluff Head disposal area muck.

Currently portions of the intertidal zone adjacent to the discharge area on the west side of the Kennebec, as well as other nearby areas have "dead" zones of muck. Since no investigation of the actual disposal area has been done, as required by the 40 CFR 230 guidelines, I cannot comment on the condition of the disposal area, and it is possible, that the muck has a different cause. However, slimy muck did show up in the intertidal zone immediately after the November 2009 dredge disposal, and in dramatic ways. While kayaking during the disposal period at low tide, a submerged rock which has always been clear of debris had more than an inch of muck perfectly balanced on top of it. This rock is on the west side of the Kennebec and somewhat to the north of the disposal area. One can imagine, with the disposal occurring at almost high tide the suspended material was entrained in the surface water, and then settled out on the rock, which then became above the tide level. The muck did not stay on the rock, after the tide rose again, but it does show a causal relationship of the muck to the disposal.

Regarding the natural state of the Bluff Head disposal area, I had a discussion with Dr. Steven Dickson, Maine Geologist, in the summer of 2010, at a meeting with Maine DEP and Bill Kavanaugh and Jay Clement of the Army Corps of Engineers, and Alicia Heyburn, Outreach Coordinator of the Kennebec Estuary Land Trust. Dr. Dickson provided information on various studies that he has been involved in regarding the movement of material in the stretch of the Kennebec from Merrymeeting Bay to off-shore Popham Beach. Regarding the Bluff Head area, he reported that it is a rocky bottom.

Dr. Dickson has been providing information about the geology of the Kennebec Estuary for many years. When BIW was going through the permitting process to create the LLTF and the dry dock, Dr. Dickson submitted five pages of formal comments on January 23, 1998. Because BIW had suggested dumping the excavated material which was to be generated during the creation of the 12.6 acre and 75 foot deep sinking basin in the Bluff Head disposal area, Dr. Dickson addressed the disposal of dredged material.

Disposal of dredged material should be based on its geological (and chemical) characteristics. Large volumes of blue clay disposed in the river or offshore at the mouth of the river would likely result in increased water turbidity . . . Some of the coarser dredged material may be suitable for river or ocean disposal. Historically, the Bluff Head disposal site is one of dispersal and dredged material would be swept away by the tidal currents. The rate and direction of spoils movement from the disposal site is unknown. In the short-term, normal estuarine circulation may move sand upstream to the sand wave field north of Doubling Point where there is a probable zone of bedload (sediment) convergence. Silt and organic matter will be dispersed in both upstream and downstream directions as the spoils pile is winnowed by the currents. Phippsburg clam flats (e.g. Drummore Bay) have been an area of local concern in past dredge events. The flats are probably not threatened by sand disposal but silt (which has been dumped in large quantities) might be resuspended and result in increased column turbidity and possibly be deposited on intertidal flats. Without more information or analysis, the suitability of the Bluff Head disposal site for silty alluvial sediments remain questionable.

F. How much muck (fine silt and clay) is in the 50,000 cubic yards proposed to be dumped at Bluff Head.

The material dredged and disposed by BIW in 2009 may be very different from the material that may ultimately be dredged this summer, or, at some time in the near future. Even though the materials are different, it may be inappropriate to just disregard the relatively small weight percentage of fine particles. Sand is relatively heavy and typically a cubic yard of sand is estimated to weigh 2700 pounds. Thus the weight of the sand being disposed appears to be **135 million pounds.**

This is just an approximation. Assuming that the estimate is valid as if it was dry sand . . . then the calculation of the amount of fine material is as follows:

If the amount of silt and clay is 1%, that will be 1.35 million pounds of silt and clay. If the amount is 0.5%, that would mean that almost 700,000 pounds of silt and clay will be disposed in the fast part of the river this summer. Considering the restrictive Shoreland protection rules, in part because of a concern of erosion causing the addition of fine materials into the river - -this large, slug of fine materials and its impact on the environment needs to be better understood before it is permitted. Although regulators in the past have not given much credence to the clambers who have testified for years that dredging causes fines to close the clam holes. At the February 24, 2011 public meeting in Phippsburg, the chairman of the shellfish commission described, again, that this phenomenon does occur and how August is an important clamming month. Now in light of the questionable conclusions of the Noramandeau 1997 study, the clammer's contention needs to be seriously evaluated.

The amount of silt and clay is important, especially near areas of historic contamination, because unlike particles of sand, silt and clay tend to adsorb toxic metals and organics. Also, these materials can negatively impact the turbidity of the water, which has a negative health impact on many aquatic animals.

Although the permit application describes the dredge material alternatively as clean sand or sandy material, the information shows that a significant amount (in pounds and volume) of fine particles will likely be disposed and dispersed.

G. The Bluff Head disposal area in pictures and the seal report.

Prior to the November 2009 dumping, there were three resident seals that were around throughout much of 2009. I could count on seeing them almost every day in the "disposal area" fishing. If they weren't fishing when I came down to the river, sometimes, all I had to do was whistle for a bit, and they would appear.

Figure 3: Picture of Bluff Head disposal area August 31, 2009, looking south. With a seal near the point of the arrow.



They were visibly disturbed by the dumping and the high turbidity. When USACE, MEDEP and BIW came to the location in November 2009 during the dredging disposal period, so that I could have them see the effect of the dredging disposal, they saw one of the seals. Although the seals came back briefly in January, they appear to have moved on and are no longer in the area. Transitory seals do go in and out with the tide during portions of the year. Today, March 20, 2011, a seal was once again vigorously fishing and keeping me in its awareness. The seal seemed to enjoy my whistling – though I can't tell if it was one of the three seals from 2009.

The dumping of dredge spoils in November 2009 altered the intertidal zone adjacent, downstream and upstream from the disposal area.. As shown at the public meeting, Figure 5 below, the mid-intertidal zone is still encumbered with areas of "dead" mucky material, The material is being tested for metals, grain size and % organic content.

Figure 5. One of the areas of accumulated muck, on an otherwise rocky shore. Footprints From 2/24/2011 when retrieving a sample of the muck for the Phippsburg public meeting.



Figure 4. Dredge disposal by tug and barge in Bluff Head in November 2009. Picture shows dump near the east bank, but the disposal was done in the middle as well.

Dredge disposal
November 2009



H. Alternatives that could/should be part of the evaluation.

Especially in these times of economic uncertainty, having our tax dollars used to move sediment from point a – to point b, just so it can move back upstream to be dredged again, seems wasteful when there are less costly, more environmentally sound alternatives that meet the objective. Hopefully the powers that be, will encourage using a cheaper, better, smarter solution. Perhaps one of these options will spark the development of a really great alternative.

1. **No dredge option.** Since the BIW pilots can effectively take the Spruance down river without any dredging, hire a BIW pilot to assist in navigating the Spruance down the Kennebec for the September 1, 2011 sailaway. Cost is very low and environmental impact is very low.
2. **Minimize dredging option with beneficial upland reuse of dredge spoils.** If dredging is required, do a limited dredging, estimated by Bill Kavanaugh at the 2/24/2011 public meeting, of about 10,000 cubic yards to fully satisfy the authorized channel depth. The Navy representative at the 2/23/2011 meeting stated, in a conversation with me, that dredging to the authorized depth is all that they require. Perhaps use a low turbidity clamshell dredge as the dredging equipment to reduce the turbidity of the proposed hopper dredge equipment. The huge reduction in volume, due to not over-dredging, will provide cost savings and environmental impact benefits. Beneficial use of the dredge spoils for landfill cover or similar application should be considered, as that will remove all the requirements related to disposing of this dredged material in-river. In addition, since disposal doesn't have to coincide with almost slack water in the Bluff Head disposal area, this alternative may have increased time flexibility and result in a significant time savings.
3. **Flattening sand crests option by pushing crests into the troughs.** Modify Mother Nature's sculpting efforts by flattening the sand crests, through pushing the sand material in the crests into the troughs. A procedure sometimes called "bar dragging" might accomplish the required result without the extensive dredging and disposal, although further analysis of the sand wave field would be necessary. Because of the rapidity of sand wave formation, and deformation, this option could be used just prior to deep drafts boats transiting the reach. Although no estimate of deep draft transits was provided, it appears to be just a few times a year.
4. **Fully study sand transport issues before doing any "over-dredging".** A full evaluation of the migration of the material which is disposed in Bluff Head is required prior to using the disposal site to comply with 40 CFR 230. Since at least 1980, because it is discussed in the 1980 Environmental Assessment, many regulators/scientists have speculated that we are dredging and re-dredging the same material. In addition, Bill Kavanaugh has repeatedly discussed the fact that sand wave peaks that are a problem because they are too close to the surface, are often gone within weeks because of the strong forces within the river system. Similarly, work that monitored the sand wave heights from the 1982² dredging of

² Environmental Assessment, August 1981 (Signed 9/1/1981 – but did not include a CWA certification).

"- Environmental Assessment and Finding of No Significant Impact for Maintenance Hopper Dredging of the 27-Foot Channel below Bath to Remove about 50,000 cy of Sand Shoal from the Doubling Point Reach, with Disposal In-River North of Bluff Head. Dredging would include Advanced Maintenance to a Depth of -35 Feet MLW, the Elevation of the Base of the Sand Wave Shoals at Doubling Point.

Doubling Point, based on the 1981 Environmental Assessment, apparently (based on reading the draft USACE EA dated February 2011) showed significant sand waves reforming within four months even though over-dredging was done. Thus, over-dredging should not be included as a knee-jerk reaction. The in-river disposal requirements expect that a detailed analysis, with supporting data, be done showing that the extra costs and environmental impacts today are worth the risks that re-dredging will be of little benefit because of current actions on the vast amount of sand still remaining in the seabed convergence zone.

5. **Delay dredging as much as possible and then just do targeted dredging as need arises.** Continue to delay the dredging and develop engineering solutions to do targeted dredgings if a need arises. Switch the mindset from bringing in big dredging operations from the other side of the country with high mobilization costs. Historically, the currently nine year period since the last dredging is well in excess of the average.

I. Review of issues raised at the public meeting of the Department of Marine Resources in Phippsburg (2/24/2011).

For completeness, I'd like to put on the record some of the important points that were brought up at the public meeting. The project dredging work was described at a public meeting in Phippsburg, Maine on February 24, 2011. This was a useful meeting and we thank Brian Swan for organizing it and for the participation of Bob Green, Bill Kavanaugh, and all the stakeholders that attended. Because Phippsburg televised the public meeting, the reach of the meeting and the information discussed, has been much broader than the number of people in the room.

Issues raised at the meeting were:

- a. The inconvenience and disruption of the dredging and disposal occurring in August during the most populated time of year. Tourism is a growing and important economic driver for the lower Kennebec River area. During August, fishermen, clambers, tour boats, vacationers and residents use the water and shoreland extensively. The wildlife is particularly abundant including stripers, sturgeon, seals, ducks, birds, and raptors.
- b. The fact that the breathing holes in the clam flats historically get covered up due to turbidity during dredging and that this makes harvesting clams hard and that August is a prime month for clam harvesting. Brian Swan referenced a 1997 dredging report, and perhaps another report, as showing that material did not stay suspended. This points out the need to document statements and analyze the work to make sure significant problems existed. If the report he referred to was the December 1997 Normandeau letter, that concludes "there was no evidence of an increase related to dredging", as discussed in the body of this report, that study was seriously flawed. This study is a good example of why a report's information should be reviewed with a critical eye to the actual data, before accepting their stated conclusions.
- c. Samples of the slimy muck that came into the intertidal zone by the "Bluff Head" disposal area from the BIW dumping in 2009 were displayed as well as the mucky sand that remains after one year of winnowing by the current and storms. Samples showing the difference to Popham Beach sand were also displayed. A request to Army Corps of Engineers to bring the samples taken in January 2011 of dredged material was denied and a Freedom of Information Act request for viewing the dredge samples was denied.
- d. That the Bluff Head disposal site has not been permitted or evaluated.

- e. That the Bluff Head disposal site is in Class SA water which appears to prohibit dredge spoil disposal.
- f. The dredging is proposed to be done outside the known acceptable window of November through March and the impact of the dredging has not been minimized.
- g. That the concerns raised by the public at the meeting were apparently being given little weight.

Conclusion:

It is my belief that these comments support the conclusion that the current ACE permit application should be revised and resubmitted with an EA that is complete, and shows compliance with 40 CFR 230. As a homeowner abutter to the disposal site, who is affected by the Bluff Head disposals, I request that I be involved in the permitting process for this application to the fullest extent allowed, including participating in coordination discussions and receiving all correspondence. Please add me as an intervenor and interested person. I have a compelling reason to be involved in the negotiations that determine additional testing requirements and their protocols, reporting requirements, mitigation measures and enforceable conditions. I believe my involvement will be helpful in developing an improved solution to the current dredging and in-river disposal.

Please contact me if you would like to discuss any of these comments or desire additional information.

Thank you for the opportunity to make comments.

Sincerely,

Dot Kelly
98 Pleasant Cove Rd
Phippsburg, ME 04562
(207) 443-4787

Appendix 2: Draft.

Updated Table 1 from 2011 draft EA: Kennebec River Federal Navigation Channel Dredging History. The rows in red was summarized in ACE Maine List of Docs and Reports on Rivers

| Date | Volume | Location | Contractor | Dredge | Disposal |
|---------------------------|------------------------------|---------------------------------|-----------------|--------|---------------------------|
| 1950 | 108,830 | | Lyman | Hopper | |
| 1953 | 58,390 | | Lyman | Hopper | |
| 1956 | 4,707 | | Hyde | Hopper | |
| 1960 | 54,535 | | Comber | Hopper | |
| 1964 – Sept-Dec | 6500 | | | | |
| 1965 – Aug | 14,400 | ? | | | |
| 1967 | 64,200 | Dredging of 27 ft Channel- DP | Comber | | |
| 1968- Jan-Jul | 32,070 | DP new depth? | Comber | | |
| 1969 | 20,000 | DP new depth? | Comber | | |
| 1971-Jun | 54,534 | DP PB | | | KN Open Water disp |
| 1975-Jun | 102,930 | DP | | | Morse Cove -BH |
| 1980 - | ? | JL | | | |
| 1981 – Oct-Nov | 53,300 | DP | | | KN |
| 1986-Sept | 57,902 | DP | McFarland | | KN |
| 1988? ¹ | 2900 33,500 | Overburden BIW Ledge s. dock | | | Upland landfill KN |
| 1989 | 77,362 | PB | McFarland | | Seguin? 2011EA says JL |
| 1991 – Oct | 69,000 | | | | KN |
| 1997 – Oct-Nov | 21,660 | DP-10,288 PB-11,372 | | Hopper | KN JL |
| 1999 – March ² | 4000 | BIW piers | | | Upland |
| 1998-2000 | 250,000+ | LLTF - DDSB | | | No in river disposal |
| 2000 - Dec | 20,000 | DP- PB- | Atcafalaya | Hopper | |
| 2000 -Dec | ? | BIW Sinking b | Weeks Marine | | |
| 2002 | 25,000 | DP-7900 PB-13,000 | | | KN JL |
| 2003 – Dec - April | 47,000 ³ 8,500 | BIW Sinking b. BIW Sinking b | | Mech'l | KN KN |
| 2003 | 22,310 | JL | | Hopper | |
| 2007 | 53,474 ⁴ | BIW Sinking b. | | Mech'l | KN |
| 2009 | 18,750 ⁵ | BIW Sinking b. | | Mech'l | KN |

¹ From ACE Permit MC-Bath-87-1168-2-88

² Many piers and other BIW dredgings for upland disposal – list of 20+ and ongoing. Not summarized here.

³ Page 4 BIW comprehensive permit to ACE says amount dredged and disposed in 2003 was about 70,000

⁴ From BIW annual reports

⁵ From BIW annual reports

March 30, 2011

Dot Kelly
98 Pleasant Cove Road
Phippsburg, ME 04562

Mr. William Kavanaugh
U. S. Army Corps of Engineers
New England District
696 Virginia Road
Concord, MA 01742-2751

COMMENTS SUBMITTED VIA E-MAIL

RE: Public Comments to the Army Corps of Engineers Proposed August 2011 Maintenance Dredging [*and In-Water Disposal*] of the Kennebec River Channel, Sagadahoc County, Maine

Dear Mr. Kavanaugh,

Thank you for providing this opportunity to comment on the Kennebec River Maintenance and Advance Maintenance Dredging and Disposal project proposed for August 2011. The US Army Corps of Engineers (USACE) is proposing to dredge sediment from the Kennebec River federal navigation channel at Doubling Point reach. The tops of some of the sediment waves, which are sculpted by the currents in that reach, may interfere with the Spruance's departure from BIW scheduled for September 1st, 2011. As described in the March 16, 2011, CENAE Suitability Determination for this project, USACE is proposing to dredge 50,000 cubic yards (cy) from a 23-acre stretch of the Doubling Point reach and dispose of these dredged materials in the Kennebec Narrows, the "north of Bluff Head disposal site"¹ two miles downstream. In addition, the USACE proposes to dredge 20,000 cy from a 39.2 acre area of the navigation channel at the mouth of the river south of Fort Popham, just off-shore from the Popham Beach B&B, and dispose of this material near Jackknife Ledge, about 1 mile off the low-tide line of Popham Beach State Park.

These comments incorporate by reference the comments of The Phippsburg Shellfish Commission; the Kennebec Estuary Land Trust; the Friends of Merrymeeting Bay; Brenda Cummings, President of the Phippsburg Land Trust; Laura Sewall, Director, Bates-Morse Mountain Conservation Area and Assistant Director, The Harvard Center for Community Partnerships Bates College; and the comments of Stephen Hinchman, Esquire. Additionally,

¹ The North of Bluff Head disposal site, will be called the Kennebec Narrows disposal site in this comment. The Kennebec Narrows disposal site is between Morse Cove and Bluff Head in the Kennebec Narrows portion of the Kennebec River. Phippsburg is on the western shore and Arrowsic is on the eastern shore. The eastern shoreland is quite steep, and undeveloped. The western shoreland is residential, with homes set back from the shore because of shoreland protection regulations, as well as the topography of the area.

the comments I submitted to the Maine Department of Environmental Protection on March 21st, 2011 are included as Appendix 1.

Statement of My Interests in This Project and My Experiences with the Disposal of Dredged Materials from the BIW Sinking Basin Project in November 2009.

My home is located on the west side of the Kennebec River Narrows abutting and immediately adjacent to the disposal site.

In November 2009, after noticing the loud, lighted, night-time dumping, from my living room window and then seeing the turbidity in the water and black, slimy muck on the intertidal zone, I made some calls to find out who was doing the dumping. Once it was determined that the dumping was being done by BIW with permits from the Army Corps of Engineers (ACE) and Maine Department of Environmental Protection (MEDEP), I invited the ACE, MEDEP and BIW to my property on November 24, 2009 to see the impact of the disposal and to discuss the applicable regulations. My shoreline is normally rocky and compacted. After the BIW dredging, thick mud had accumulated on my shoreline and was visible upstream and downstream. A request for a sample of the material that was being dredged, was denied and no samples, not even one, had been taken as part of the permit application process.

At the riverside meeting with the agencies, I requested that the disposal be stopped until the proper permit information was provided and the determination made that **this** disposal area was the least environmentally impactful, practicable, disposal location, and that appropriate actions to minimize impact had been taken, as required by the in-water dredge disposal site regulations in 40 CFR 230.

Dredging and disposal stopped before the end of the Thanksgiving weekend and I remain hopeful that entities that wish to use the Kennebec Narrows for disposal of dredged material will do the required permitting prior to further dredging and disposal.

Although I have been an abutting property owner to the Kennebec Narrows disposal area since spring of 2007, I received no notice of either the November 2007 sinking basin dredge material disposal permit (which had only 15-day public notice period by the Army Corp of Engineers), nor the November 2009 sinking basin dredge material disposal permit, which did not have any public notice period from the Army Corps of Engineers and which resulted in a 10+ year permit expiring 12/31/2019.

Based on my review of USACE and MEDEP permits, prior to issuance of the 2002 BIW dredging permits that allow dumping of the sinking basin dredged material in the Kennebec Narrows, the sinking basin dredged material as well as the dredging material from the dredging of the ways and piers required upland disposal or beneficial reuse, for example as landfill cover.

BIW used to give away dredged materials from their ways and piers for use as topsoil, until chemical analysis showed levels of heavy metals and polycyclic aromatics that, at times, were above the health based criteria. Upland disposal continues for these materials, but with controls on allowable beneficial reuses. In 1988 BIW received a permit to remove an underwater ledge by the south dock. The sediment on top of the ledge was dredged and beneficially used upland while the rock ledge debris was permitted for dumping in the Kennebec Narrows.

In 2002, because the BIW sinking basin (which had been predicted by the engineers to be self-scouring) seemed to be becoming significantly shallower, either because of sidewall slumping or sediment deposition, there was a strong push to permit the basin's dredged material to be disposed of in the river. Based on a determination that the dredged material consisted of clean, coarse sand that would not impact areas outside the disposal zone, MEDEP issued a NRPA permit for dredging of the sinking basin and disposal of 10,000 cubic yards per year in the Kennebec Narrows for 10 years.

Unfortunately, the determination that disposal of this clean coarse sand would not affect adjacent areas – including my property, and nearby marshes, flats and rocky shores – has not proven correct. The foot-deep layer of muck that pooled in the intertidal zone after disposal has not “gone away”; it covers significant areas of the intertidal zone, up to 6 inches deep. And the follow-up question is when the material “goes away” has it gone to somewhere that is appropriate. Samples of the muck are being analyzed for chemical constituents and grain size, and that data should be available soon.

These are the type of impacts that the Section 404(b)(1) Guidelines and USACE dredge disposal site regulations require be addressed and resolved (i.e. avoided or mitigated) before any action is taken. Then, only if the in-water disposal site is the least environmentally impactful, practicable alternative, do the regulations and guidelines allow issuance of a permit. It is my hope that in the current process, the USACE will fully address these requirements and avoid a repeat of the impacts caused by dumping in 2009 and, based on my research, which also occurred during prior dredging and disposal events in the Kennebec Narrows.

Maintenance Dredging of Doubling Point with Disposal at North of Bluff Head (Kennebec Narrows) and Maintenance Dredging at Popham Beach with Disposal at Jackknife Ledge set for August 2011.

I appreciate the fact that MEDEP and the USACE provided me, as an interested person and abutter of the Kennebec Narrows disposal area, with notice of the public comment period for this August 2011 proposed dredging and in-water disposal. The following comments review the USACE Public Notice, the USACE Draft Environmental Assessment submitted with the Corps' NRPA permit application to MEDEP, and related documents and studies, in light of the requirements for discharge of dredge and fill materials contained in 40 CFR 230.

Cumulative Impacts.

The proposed action cannot be viewed as a single activity: rather it is just one in a series of dredging and disposal projects that have significant impact on the Kennebec River both individually and collectively. Because the cumulative impact of disposal on an area must be taken into account, all dredge and disposal activities must be documented, including both USACE actions in the navigation channel area, and also BIW disposals. Based on information on page 5 of the draft EA, “Table 1, Kennebec River Federal Navigation Channel Dredging History” and other information in the record, I have created Appendix 2, which attempts to create a comprehensive list of dredging and disposal activities. Correcting and updating this Appendix to reflect the most accurate information will be helpful.

Low Impact Dredging.

Stephen Dickson, Maine State Geologist, has been evaluating the Kennebec River dredging and disposal areas for many years.

On February 24, 2011, the day of the Phippsburg public meeting regarding the proposed August 2011 dredging and disposal in the Lower Kennebec River, he provided the following information on the sediment movement from Bath through Bluff Head, which explains why the Doubling Point channel continues to need dredging to meet the navigational requirements of the ships at BIW and compliance with the 27 foot authorized navigational depth.

On a daily time frame, the Kennebec River below The Chops (upstream of the City of Bath) has reversing currents driven by the rise and fall of the tides (Fenster et al., 2001). Bi-directional (flood and ebb) transport of bedload (river-bottom) sand in the Kennebec River estuary results in a "bedload convergence zone" (Anthony, 2009) in Doubling Point Channel. Sand is transported downstream in the river-dominated section of the Kennebec River from Merrymeeting Bay (FitzGerald et al., 2000; Hannum, 1997) where it accumulates in the form of large sand waves in a bedload convergence zone. These sand waves are what need to be periodically dredged by the US Army Corps of Engineers.

Downstream of Doubling Point, sand on the river bed can be carried upstream by flood currents that are stronger than ebb currents (using salinity as a conservative tracer in data provided in Larsen and Doggett, 1976). Tidal mean velocities at Hospital Point (at the south end of Doubling Point Channel) measured in September 1994 show net northerly currents near the river bed (Mayer et al., 1996, Figure C.6.4) as do measurements in May 1994 near Bluff Head (Mayer et al., 1996, Figure C.3.1). Flood velocities near the river bed reported by Mayer et al. (1996) were in excess of 25 cm/sec and sufficient to move sand (Dyer, 1986; Gadd et al., 1978). Thus sand can be carried upstream to the bedload convergence zone from south of Doubling Point.

Over a period of decades or longer, spring floods turn the entire river to freshwater and tidal circulation is suppressed. Periods of river flooding can result in river-bed sand being carried toward the coast and Popham Beach (Fenster et al., 2001; FitzGerald et al., 2000). Fine-grained sediment (silt and clay) also exits the estuary by being carried in suspension (Stumpf and Goldschmidt, 1992) out the river mouth near Popham Beach during floods.

In short, the sand waves at Doubling Point Channel form and re-form because that segment of the Kennebec River is a bedload convergence zone. River and tidal currents as well as the shape of the bedrock channel of the Kennebec River preferentially deposit and accumulate sand in this section of the river. I expect removing sand from the channel by dredging will be replaced by other sand within the Kennebec River. Without further study of the river's sand budget it is not possible at this time to say with certainty what volume of sand could be removed from the river that would result in permanently deepening the channel at Doubling Point Channel (to avoid the need for future dredging) or what the habitat effects of such a removal would be. Permanent removal of large volumes of sand from portions of the river near Bath could possibly affect Popham Beach in the future. Disposal of sand within the Kennebec River is certain to avoid and minimize long-term beach impacts.¹

This detailed, foot-noted, up-to-date scientific information, intelligently reviewed, and which notes areas of uncertainty and inadequate data that warrant further review, is a model of the type of scientific discussion needed to comply with the 40 CFR 230 factual determinations and which would provide an adequate basis for informed review by concerned parties.

It should be noted that Mr. Dickson alludes to the fact that there is some quantity of dredging and removal of sediment that appears to have no significant impact; for instance the ways and piers, which are dredged annually by BIW and disposed of at upland sites. There also may be some management approaches that require less dredging at Doubling Point, and it appears that progress is being made on that goal. The current period is the longest that Doubling Point channel has gone without dredging since 1950. Since the Doubling Point channel has not been dredged for almost nine years, continuing to look for ways to work with the forces of nature should be encouraged. For instance, the Navy originally requested dredging in time to allow the Spruance to exit the river for sea trials in February and March. Because that was logistically impossible, the USACE documented a deeper channel outside the federal navigation channel and, using a local river pilot, BIW was able to safely transit the river. This approach could be repeated in September and would enable more time to determine a dredging regime that complies with the Section 230 requirements and that has less impact on the river and other users of the river.

Another solution the Corps should evaluate – given the rapid reloading of sediment at Doubling Point – is whether a dredge-only technique could enable the Spruance to safely exit the river by knocking the peaks of the Doubling Point sand waves into the troughs, and thus eliminate the need to dispose of 50,000 cy of dredge spoils in August, when the potential for harms to the river, clamflats, endangered species and other resources is greatest. It is my understanding that this approach is used by the USACE on the Mississippi River. Another approach would be minimal dredging and disposal, instead of over-dredging.

Additionally, over the long term, the Corps should work to understand the amount of sediment that can be removed annually that would be considered insignificant. This would put some parameters around the sand-sediment loading question.

From verbal discussions with Mr. Kavanaugh, it appears that the Navy and BIW have been suggesting the channel needed to be dredged for a few years now, however the sands kept shifting sufficiently that dredging was not required. This supports the notion that a minimal dredging approach might keep the federal navigation channel open with far less impact than current practices. The dredging disposal site regulations (40 CFR 230) require that practicable options that have a smaller environmental impact be permitted, while in-water disposal with a larger environmental impact be prohibited.

Evaluation of Whether Sediment Movement From Popham Beach Dredging and Disposal at Jackknife Ledge Contributes to Erosion of Popham Beach.

The dramatic erosion that has occurred at Popham Beach since 2003 until the Morse River broke through the sand bars off the mouth of the river, has been devastating for the health of the Popham sand dune system.

Mr. Dickson has provided excellent documentation and information on the extensive erosion that has been seen at Popham Beach.² The question of whether disposal in the vicinity of Jackknife Ledge has an impact on the sandbars that block the Morse River was not directly addressed by Mr. Dickson or in the current draft EA, and is an important consideration. Concerns that the erosion at Popham Beach may be linked to dredging and disposal activities in or near the Kennebec River was voiced in the first Environmental Assessment prepared in 1980 for the dredging and in-water disposal for the Lower Kennebec River. However, the 2011 Draft Environmental Assessment does not discuss erosion at Popham Beach or provide any information about the current scientific understanding of the Popham Beach erosion/deposition system and how it relates to off-shore sand bars and disposal at Jackknife Ledge.

The 1980 EA, over 30 years old, discussed the controversy and on page D-2 pointed out the need for further investigation:

There is at least a possibility in some people's opinion that Corps dredging in the Kennebec River has resulted in the erosion that Popham Beach is now experiencing by depriving it of sand.

This . . . point demands further investigation, as it finds the State of Maine and the Corps holding differing opinions on cause and effect relationships of the erosion of Popham Beach. The State of Maine (specifically a former State Geologist) believes that a strong causal relationship exists.

It is the position of the Corps of Engineers that no definitive link between dredging and Popham Beach erosion has been shown.

In part to address this concern, the Corps started disposing of Popham Beach dredge spoils at Jackknife Ledge (JKL) in order to keep the materials within the Popham and Seawall Beach sand budgets. But an inadvertent and unintended consequence of this practice may have been to influence the buildup of the sandbar at the mouth of the Morse River (directly opposite JKL), which started by 2003, worsened in 2005, and continued until the sand bars were broken in 2010. This sandbar caused diversion of the Morse River to the east, severely eroding Popham Beach State Park and threatening to undercut the bathhouse there. If additional dredging disposal from this project contributes sediment that rebuilds the sand bar system, erosion may again occur. In order to comply with USACE regulations, no further disposal at JKL should occur until competent scientific evidence shows that dumping at Jackknife Ledge does not build the sandbar off the mouth of the Morse River. See 40 CFR 230.11 (a) ("Potential changes in substrate elevation and bottom contours shall be predicted on the basis of the proposed method, volume, location, and rate of discharge, as well as on the individual and combined effects of current pattern, water circulation, wind and wave action, and other physical factors that may affect the movement of the discharged material."). In other words, prior to disposal, the Corps must identify how that disposed material may affect other resources.

² See:

<http://www.maine.gov/doc/nrimc/mgs/explore/marine/sites/nov08.htm>

<http://www.maine.gov/doc/nrimc/mgs/explore/marine/sites/mar08.htm>

<http://www.maine.gov/doc/nrimc/mgs/explore/marine/sites/may09.htm>

<http://www.maine.gov/doc/nrimc/mgs/explore/marine/sites/jan10.htm>

Impacts to Clam Flats From Dredging and Disposal.

Although the Draft EA concludes that the Doubling Point dredging and Kennebec Narrows disposal will not impact downstream clamflats, that position is contradicted by the experience of lifelong clammers in the region (see Comments from the Phippsburg Shellfish Committee) and by my own experience with the 2009 disposal. In Nov. 2009, disposal of just 18,750 cy of "clean sand" resulted in deposition of thick mud and muck on my shoreline, and similar deposition at the marshes immediately downstream at Bluff Head. No tests or surveys were done to establish how far the deposition extended. However, it seems reasonable to conclude that three to five straight weeks of hourly dumping of 50,000 cy of dredged material at the Kennebec Narrows will entrain far more sediment in the water. Given the strength of the tides and currents, it is accepted that the sediment will not stay in the disposal area, but rather will be transported upstream and downstream and that sediment will settle out on riverbanks, marshes and flats.

Related to the contention that dredging and disposal disrupts the clam flats due to particles clogging the clam breathing holes, the draft EA states on page 20, *"Discussions in the previous section show that the disposal of material at the in-river disposal site would settle out before reaching the tip of Bluff Head"*. I strongly question whether the discussions in the previous section can determine that "the disposal of material at the in-river disposal site will settle out before reaching the tip of Bluff Head". This statement has so many site-specific criteria, including the current velocity, the material being disposed, and other material being disturbed near the disposal site. The previous section refers to dredging that was done with mechanical dredge equipment, dredging that was done in the Delaware River which does not have the current velocity of the Kennebec, and the Kennebec Narrows Water Quality Certification study performed by Normandeau Associates in 1997.

The Normandeau study's methodology is reviewed on page 4-5 in the March 21, 2011 comments submitted to Maine DEP and attached as Appendix 1.

As an overview, the problems with relying on the Normandeau study to make a determination that sediment at the in-river disposal site would settle out before reaching Bluff Head, include that the study had a skewed baseline, only monitored the first day of material disposal, only monitored the mid-level and bottom of the river, not at the surface, and only monitored at one location south of the disposal site, at a given time, hundreds of yards away from the disposal area, which may not be indicative of the real turbidity impact.

On page 21, the draft EA, also refers to the Larsen 1992 study, "A Final Report on the Effects of Dredging and Spoil Disposal on the Sediment Characteristics of the Clam Flats of the Lower Kennebec Estuary". The EA states, "The study did not identify any relationship between dredging or disposal of dredged material and sedimentary alterations on the Kennebec River clam flats."

Having looked closely at the study's methodology section, and measurement techniques, it is clear the study did not evaluate whether particles clog the clam breathing holes. Therefore, I

don't believe the study should be relied on as proof that dredging and disposal does not disrupt the clamflats due to sediment clogging the clam breathing holes.

Requirements of 40 CFR 230.

The remainder of my comments discuss the evaluations that the dredging disposal site approval regulations require.

40 CFR 230.1(c): Fundamental to these Guidelines is the precept that dredge or fill material should not be discharged into the aquatic ecosystem, unless it can be demonstrated that such a discharge will not have an unacceptable adverse impact either individually or in combination with known and/or in combination with known and/or probably impacts of other activities affecting the ecosystem of concern.

The Kennebec Narrows disposal site is a rocky, deep, narrow (300 yards) channel with strong currents, eddies and upwelling. It is a critical and very biologically rich area: all the aquatic life that rides the currents up and down the Kennebec transits the narrows. Since it is a fertile fishing ground, it attracts diving ducks, birds, birds of prey and seals. Biological impacts to this rich aquatic environment have not been studied at all, but I believe are significant and long lasting. It is incumbent on the applicant proposing to use an in-water disposal site that has not been pre-approved, to provide specific quantitative information to make the determination of impact.

40 CFR 230.5 General procedures to be followed.

In evaluating whether a particular discharge site may be specified, the permitting authority should use these Guidelines in the following sequence.

(a) In order to obtain an overview of the principal regulatory provisions of the Guidelines, review the restrictions on discharge in 230.10(a) through (d), the measures to minimize adverse impact of subpart H, and the required factual determinations of 230.11.

Although the permitting authority likes to rely on the historic use of the Kennebec Narrows disposal site as justification for why it should continue to be used, that logic does not work in the case of the Kennebec narrows. Although not rigorously studied, strong freshets do clear the area of prior dredge material every few years according to the Corps, and that seems consistent with the bathymetry studies that I have reviewed. Unfortunately, though the site may eventually cleanse itself and be ready to recreate its natural habitat, repeated disposal events prevent rehabilitation. Time after time, this area is subjected to dumping of massive volumes of dredged materials, and other areas are then subjected to additional sedimentation as this disposed material migrates through the aquatic environment.

The May 1992 US Army Corps of Engineers new England District Brochure on its Dredged Material Program, addresses choosing a dredge disposal site on page 7:

Most locations are specifically chosen to ensure that disposal sites are not situated in areas with strong bottom currents which might cause erosion of the disposed material. During the disposal site selection phase, all proposed sites are also studied to determine bottom topography, sediment type (such as sand or mud) fisheries resources, and local bottom-dwelling

"benthic" communities. In addition, the levels of trace metals and hydrocarbons normally found in the sediment and in the body tissue of the local marine animals are determined.

The primary concerns during most disposal operations are that the dredged material is placed accurately at the site, that the material covers as small an area as possible, and that it remains there. Precise electronic navigation, buoys to mark actual disposal point and on-site disposal inspectors are all used to ensure compliance.

None of the dredge disposal management techniques that are described in this brochure including re-colonization studies, assessing the physical integrity and stability of the disposal mounds, and post-disposal monitoring of the aquatic environment are being done at the Kennebec Narrows. If the Kennebec Narrows is going to continue to be used as a disposal site, the management controls to ensure that the disposal is done properly and the ongoing monitoring should be instituted as part of the permit conditions.

40 CFR 230.11 Factual Determination.

The determinations of effects of each proposed discharge shall include the following:

(a) Physical substrate determination.

Determine the nature and degree of effect that the proposed discharge will have individually and cumulatively on the characteristics of the substrate at the proposed disposal site.

Depth of Disposal Area.

The depth of disposal is inaccurately described and does not comply with 40 CFR 230 which requires extensive information about the disposal area, the dredged material, how the dredged material will effect the disposal area and its surroundings physically, chemically and biologically.

The *Sampling and Analysis Plan for Kennebec River Federal Navigation Project, Bath and Phippsburg*, from Phillip Nimeskern dated January 26, 2011, states that, "[t]he material from the Long Reach area will be disposed of in a 99' deep portion of Fiddler's Reach." However, the Bathymetric surveys show that the disposal area ranges from about 45 feet to a maximum of 93.5 feet. See also Draft EA at 11. Thus, effectively there is no place in the Kennebec Narrows within the designated 500 X 500 foot disposal area that also complies with the Sampling Analysis depth requirement. When discrepancies like this are realized, the application should be amended to reflect accurate information, thus maintaining the integrity of the permitting process. Hopefully that will be done with this draft document.

Physical and Chemical Environment.

The draft EA states in the physical and chemical environment section that the Kennebec Narrows disposal site has a maximum flood of 2.5 knots and a maximum ebb of 3.0 knots, but the statement does not indicate if this is on the surface; or near the bottom. Especially because it is not typical that disposal sites should be of such high current, the fact the current value is stated without any context about its suitability as a disposal site indicates this section needs improvement.

The comments by Dr. Dickson should be discussed here. Areas of discrepancy included that the disposal area is not contiguous to the dredging area, is in a different area geologically, and is not a convergence zone. Besides spreading the dredged material

into the intertidal zones and both upstream and downstream, there is a general movement of bottom sediment upstream, back to the Doubling Point channel, so all of this money, effort and impact, is for no long term purpose. Thus advance dredging, or over-dredging makes little sense. Those would be important factual details to discuss here.

The fact that the disposal site has been show to be a rocky bottom³, not sandy, nor muddy, and therefore inconsistent with discharging dredged material should also be discussed in this section.

Historical references from 1967 and 1981 were quoted, but the extensive 1980 Environmental Assessment of 60 pages was not referenced.

On page 2, of the 1980 Environmental Assessment it says:

The proposed site has been questioned by representatives of both the Maine Department of Marine Resources and the Maine Department of Environmental Protection. Questions regarding the fate of the material after dumping, as well as questions on the impact of the dumping on resident marine life are unresolved. As a result, alternate land sites and open water sites have been investigated.

Strong comments against using the Kennebec Narrows site for disposal were submitted by Fish and Wildlife. George Beckett wrote,

- 1. Pre-dumping and post-dumping soundings be performed on the riverine dump site.*
- 2. Any future dredging only be conducted during the months of October and November.*
- 3. A suitable "on land" disposal site must be secured and utilized including beach restoration where applicable.*

40 CFR 230.11(a) *Consideration shall be given to the similarity in particle size, shape, and degree of compaction of the material proposed for discharge and the material constituting the substrate at the disposal site.*

No description of the natural substrate was given in the EA.

40 CFR 230.11(a) *Any potential changes in substrate elevation and bottom contours including changes outside of the disposal site which may occur as a result of erosion, slumpage, or other movement of the discharged material" must also be analyzed.*

Appendix 1 does provide an edited version of a study by William Hubbard, "Analysis of Survey Data Kennebec River Disposal Site" Sagadahoc County, Maine. The study monitored the disposal site one month prior to disposal, immediately after disposal operations and then 10 months later. Since the full report was not included in Appendix 1, only an edited version, making comments is difficult. With enhanced computing power, many regulatory agencies now put all background documents and comments on the

³ From discussion with S. Dickson and from "Coastal Marine Geologic Environments of the Phippsburg Quadrangle, Maine. B. Timson 1976 Open File No. 76-120.

internet. I'd encourage the USACE to look at providing information in that manner, rather than in paper form. Then providing the whole document would be easy.

The report was unable to draw many conclusions, because the volume of additional sand that accumulated between the pre-dumping survey and the end of the dumping appeared to be 4 times the disposed amount. The 500 sq. foot disposal area instead of showing 38,000 cubic meters of sand deposition, the quantity dredged, showed 67,500 cubic meters, with 10 feet of average sediment accumulation.

One possible explanation for the much higher than expected depth reduction impact in the disposal area, comes from my having seen how poorly compacted the muck (from the BIW 2009 dredging) is in the intertidal zone. Perhaps some, if not all, of the additional "volume" is due to water entrainment and the compactibility of the dredged material. Unfortunately, by limiting of the study to the 500 foot navigation channel, information about dispersion into the rest of the lateral riverbed was not analyzed. Overall the conclusions were that more directed surveys needed to be done, and that the most significant impacts are confined to the disposal area and the 1000 foot area south of the disposal area. Note: From the edited version it is not clear if the study actually looked for impacts south of 1000 feet or not. That is why seeing the full study is important. Seemingly just a typo, but Table A1 needs to be corrected because the dates of the sampling are listed as T1 (6-9 Oct 86), T2 (3 Nov 86), T3 (16 Sep 86); whereas the accurate dates appear to be 6-9 Oct 1981, 3 Nov 1981, and 16 Sep 1982.

It was informative that over the time it took to dispose of 50,000 cubic yards of sediment, the disposal area shallowed by 10 feet and the two 500x500 foot segments to the south of the disposal area also shallowed (due to material deposition) by 4.5 feet.

Unfortunately Mr. Hubbard was not teamed with a biological investigator, so no impacts to the biota were studied during the huge sedimentation. Overall, the draft EA did not determine the nature and degree of effect that the proposed discharge will have individually and cumulatively.

(b) Water circulation, fluctuation, and salinity determinations.

The Narrows are a complex system and although this study was a good beginning, no analysis of potential significant effects on the current patterns, water circulation, normal water fluctuation and salinity on the basis of the proposed method, volume, location, and rate of discharge was done. Although most of these effects might be assumed to be small, a written discussion should document that conclusion. The impact of the sedimentation on bottom currents may not be insignificant. Overall, the draft EA did not determine the nature and degree of effect that the discharge will have on water circulation, fluctuation, and salinity.

(c) Suspended particulate / turbidity determinations.

Page 18 discusses the 1997 Normandeau study and the Kennebec Narrows (Bluff Head) disposal area and repeats the conclusion that "turbidity levels were low, before, during and after the November 1997 dredging." A review of the Normandeau study was done for the comments submitted to Maine DEP for their water quality certification and for the USACE NRPA permit application comment period and is also discussed in these comments on page 5.

The major problems were that the Normandeau study used a rain event as a baseline, measured turbidity only in the mid and bottom of the river bed, the two sampling locations were a half mile to one mile from the disposal site, and that the full length of disposal activity was not evaluated for turbidity. Also, the Normandeau study monitored work by a mechanical dredge with infrequent disposals, which, as the CENAE report shows, is considerably different than a hopper dredge working 24/7 with hourly disposals. Further, given the levels of mud still remaining from the last disposal event, the 2011 evaluation should evaluate whether hopper dredge disposal – which is reported to create significant outward spread of the discharge – will exacerbate turbidity by picking up additional materials. For these reasons, the project cannot rely upon the Normandeau study. Accordingly, the draft EA does not determine of the nature and degree of effect individually and cumulatively considering the proposed method, volume, location and rate of discharge and water circulation, wind, and other physical factors.

(d) Contaminant determinations.

Determine the degree to which the material proposed for discharge will introduce, relocate, or increase contaminants.

The sampling plan for the two dredging areas is detailed in the January 26, 2011 by Phil Nimeskern to William Kavanaugh. The samples must be core samples, taken down to the depth of the proposed dredging level. If the samples show stratification, subsamples should be made of each layer. Each core or core layer should be individually analyzed for sediment grain size and the results reported with a copy of the boring log.

In the DEP comments, I raised the question of the missing sample G. The March 16, 2011 memorandum discussed below, answers that question by documenting that Sample G was attempted but not successful, because the location for sample G was a rock ledge. However, the documentation does not include where and at what depth that rock ledge is in the navigation channel.

In a memorandum dated March 16, 2011, Phillip Nimeskern, authored a memo *"Suitability Determinations for Kennebec River Federal Navigation Project, Bath and Phippsburg, Maine."*

The CENAE notes that they are proposing to hydraulically dredge the reaches, although mechanical dredging might be used instead, depending on available equipment.

Since it appears that either dredging method is capable of working in the Kennebec River, an analysis of the impact on turbidity and suspended materials would be useful. A power point presentation by Ms. Lackey US Army ERDC, Vicksburg, MS in 2009, titled "Prediction of Suspended Sediment Due to Dredging at the Willamette River" showed that for a dredging of 50,000 cubic yards of material with a much higher percentage of fines (74%), there was a significant difference between the number of pounds of re-suspended sediment. The hopper dredge was three times worse, re-suspending 265,000 pounds of sediment. It would be helpful if the USACE compared the turbidity, noise, cost, practicality and time impacts between using a hopper dredge or mechanical dredge. http://el.erd.c.usace.army.mil/workshops/09sep-dots/36_WillametteRiver_Lackey.pdf

Quantitative Comparisons Dredging Sources

Total Sediment Dredged =50,000 cy

| | Clamshell | Hopper |
|------------------------|--------------|--------------|
| Dredging Time | 4 days | 1.125 days |
| Total Mass (kg) | 15.2 million | 15.2 million |
| Total Resuspended (kg) | 40 thousand | 120 thousand |
| % Resuspended | 0.79 % | 2.6 % |

Prior to the public hearing, the USACE refused to bring a sample of the dredge material. Now that it is known that core samples were taken, I once again request that the samples be provided for independent review. Considering the muck that has accumulated on my intertidal zone, viewing a portion of each core sample could go a long way to alleviating the feeling of being uninformed.

The purpose of the March 16 Nimeskern memo is to describe the USACE rationale for why no testing of any of the core samples (other than for grain size) is necessary. The report is based on 40 CFR 230.60(a)-(d). 40 CFR 230.60(a) states:

(a) If the evaluation under paragraph (b) indicates the dredged or fill material is not a carrier of contaminants, then the required determinations pertaining to the presence and effects of contaminants can be made without testing. Dredged or fill material is most likely to be free from chemical, biological, or other pollutants where it is composed primarily of sand, gravel, or other naturally occurring inert material. . . However, when such material is discolored or contains other indications that contaminants may be present, further inquiry should be made.

(b) The extraction site shall be examined in order to assess whether it is sufficiently removed from sources of pollution to provide reasonable assurance that the proposed discharge material is not a carrier of contaminants.

Based on the fact that the Army Corps has refused to test the material for 30+ years, even though the location is close to discharges for the city of Bath, near known areas of historical contamination, and in the same reach as an industrial facility, selective testing should be done to determine an actual background of contamination or cleanliness. Analysis for heavy metals, petroleum and fecal coliform from three samples at each dredge site will be relatively inexpensive and provide tremendously more information than currently exists.

(c) To reach the determinations required by Section 230.11 involving potential effects of the discharge on the characteristics of the disposal site, the narrative guidance in subparts C through F shall be used along with the general evaluation procedure in 230.60. "Where the discharge site is adjacent to the extraction site and subject to the same sources of contaminants, and materials at the two sites are substantially similar, the fact that the material to be discharged may be a carrier of contaminants is not likely to

result in degradation of the disposal site. In such circumstances, when dissolved material and suspended particulates can be controlled to prevent carrying pollutants to less contaminated areas, testing will not be required."

Based on a reasonable reading of the section, and the analysis by Dickson, the Doubling Point channel and the Kennebec Narrows are clearly neither "adjacent" nor do they contain materials that are substantially similar. The USACE conclusion to the contrary is not supportable.

The Nimeskern memo states that:

(a) Further testing is not necessary as it can be determined that the sediment is not likely a carrier of contaminants. In both areas the sediment samples were predominately sands and gravel, having 0.1% to 0.8% fines. See attached table for details.

This is not accurate. The Doubling Point samples range from 0.1% to 1.1% silt and clay. Popham Beach ranges from 0.5% to 0.8% silt and clay. And, since the core samples have not been disclosed, it is unclear whether there are indications that contaminants may be present, such as discoloration. But more critically, as stated above, the exclusion in (a) is only valid if the proposed discharge material is not a carrier of contaminants. This is shown by applying (b) *The extraction site shall be examined in order to assess whether it is sufficiently removed from sources of pollution to provide reasonable assurance that the proposed discharge material is not a carrier of contaminants.*

In prior submissions, the USACE has used section (b) to maintain that unless there was a documented spill since the previous dredging, no sampling was necessary. In this submissions case, USACE does say that section (b) does not exclude the dredged material from testing, since there was a spill of 40 gallons of hydraulic oil. However, even though by section (b) testing should be required, USACE relies on section (c) to maintain, nonetheless, that testing is not required.

(c) The material to be dredged and the material at the disposal site are adjacent, composed of the same materials and subject to the same sources of contaminants. Further testing is not required.

I respectfully disagree with the USACE regulatory determination that the dredging site and disposal site meet the requirements of (c), therefore, some additional testing of the dredge samples is warranted.

40 CFR 230.11(d) Contaminant determination.

Determine the degree to which the material proposed for discharge will introduce, relocate, or increase contaminants.

With some test data from heavy metals, petroleum contamination and fecal coliform, all of which we're hoping to be below any level of concern, the hypothesis of safety can be confirmed.

As to the contamination with silt and clay, an analysis of the impact of the slug of silt and clay will have to be made, in order to determine the significance.

Since, the draft EA did not include any chemical or bacteriological analysis of the samples, the EA has not provided critical chemical and bacteriological information to determine the nature and degree of effect that the proposed discharge will have individually and cumulatively.

Conclusion: As a first step to using the Kennebec Narrows (N of Bluff Head) disposal site or the Jackknife Ledge disposal site, scientific work has to be done and the EA has to be updated to provide the required quantitative information on which to base a finding of no significant harm, least environmentally impactful, practicable, disposal option, and actions for minimizing adverse impacts.

Although these comments have focused on the regulatory requirements of 40 CFR 230, to document the type of work that must be done prior to determining whether an area can be approved for in-water dredging disposal, I'd like to conclude by providing a path forward.

Encourage alternate solutions to dredging in August such as use of a local pilot who knows the channels, or utilize a minimized dredging program, with an approved disposal option to allow the Spruance to transit safely.

In addition, the dredging and disposal in the Lower Kennebec River needs:

1. A transparent and detailed evaluation of the impacts of dredging and disposal especially focused on the impacts to aquatic life.
2. Adherence to the Clean Water Act (CWA) and the Maine Natural Resources Protection Act (NRPA) requiring that water quality standards not be violated when dredging is performed
3. The dredging should be done using best practices to reduce turbidity, siltation and re-deposition of materials.
4. Alternate disposal methods: Dispose of the material upland in locations that would benefit from the material.
5. Avoid over-dredging: Doubling Point and Popham Beach are active areas that re-shoal rapidly, the data doesn't show it extends the overall time between dredges.
6. Improve the Environmental Assessment by the USACE to include the BIW dredging and disposal information, because that is part of the cumulative impacts.

Thank you for the opportunity to comment on the August 2011 proposed dredging and disposal, and if I can provide electronic or paper copies of any of the background documents that I referenced, please let me know.

Respectfully submitted,
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¹ Footnotes included in Stephen Dickson's February 24, 2011 email on Doubling Point channel sediment movement.
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